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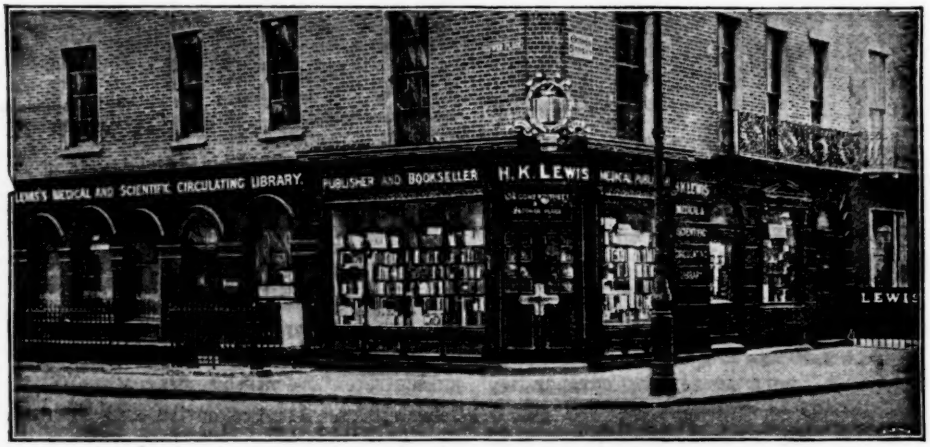

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ON

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Being Three Lectures delivered at the Summer Session, 1919,

BY ANDREW BALFOUR, C.B., C.M.G., M.D.,
DIRECTOR-IN-CHIEF, WELLCOME BUREAU OF SCIENTIFIC RESEARCH;
LATE PRESIDENT, EGYPTIAN PUBLIC HEALTH COMMISSION.

LECTURE II.—THE SOLUTION OF THE PROBLEM: PAST AND PRESENT.

IN our last lecture we considered a number of the more obvious causes which go to make up the problem of hygiene in Egypt. There are, however, others equally important though less apparent to the mere onlooker, which are best discussed along with the schemes that have been evolved for dealing with as difficult a proposition as a sanitarian was ever called upon to face.

THE SHARE OF THE CENTRAL GOVERNMENT.

For the benefit of those not familiar with the Orient it may be well, in the first place, to furnish some explanation of the predominant share which the Central Government has always had to play in these schemes and which, as you will find, has been allotted to it in these lectures, so far as the perfecting of its machinery is concerned.

In England health reform is pressed upon the Government by the public; the movement originates amongst the more intelligent and more active members of the community; it is explained in the scientific journals, discussed in reviews and the public press; books are published, societies formed, lectures and public speeches delivered, deputations to Ministers arranged. By all these means the public is aroused to the necessity of action and, through Parliament, pressure is put upon the Government to introduce legislation. When at last legislation is obtained it is largely the public, through local bodies, societies, the medical profession, and public-spirited individuals, which sees to its enforcement; and it is again public opinion which demands its extension and amendment. The rôle of the Government lies chiefly in its sympathetic assistance and in helping to obtain uniformity in administration.

How very different in Egypt! There the position is entirely reversed. Public opinion initiates nothing, demands nothing, enforces nothing. If, therefore, any advance is to be made in public health it is the Government which must call attention to the necessity of reform, the Government which must initiate and press through proposals, the Government which must try by education to overcome the inevitable opposition caused by the natural conservatism of the population. From the public little more can be expected than passive acquiescence in the proposals of the Government. A Central Government, therefore, strong enough on its health side to influence and arouse public opinion, to stimulate lethargic local bodies, and to demonstrate the usefulness of health measures by successful experiment, is the prime necessity of health reform in Egypt.

PIONEERS IN SANITARY REFORM.

The courageous person who first undertook the work of reform was Clot Bey, a Frenchman, who in 1825, under the enlightened rule of the great Mehemet Ali, established a Board of Health, which was chiefly concerned with providing means of treatment for sick and wounded civilians. This speedily led to the founding of a School of Medicine and Pharmacy and also of a Maternity Hospital, but it was not until 1845 that a Civil Sanitary Service was inaugurated in addition to the existing Military Sanitary Service, which dated back to 1820.

About this time it would appear that considerable activity was displayed in abating nuisances. Vaccination was largely practised and the registration of deaths was efficient. Indeed, a European Commission reported favourably on the manner in which the sanitary department was conducted, a fact well worth remembering by those pessimists who are inclined to say Egypt was always backward and will ever remain so. It is significant that in those days, for a period of more than 12 months, no case of plague or cholera occurred in the country.

Unfortunately, this satisfactory state of affairs did not continue, and at the time when Great Britain undertook to rectify and control the administration of the country sanitary matters were in a lamentable condition. The causes are not far to seek, and as some of them are operative in the problem of to-day they may be briefly noted.

The lethargy of the East played an important part; corruption, with the inevitable cry for backsheesh, was rampant; ignorance, indifference, and lack of recognition of all that a sound and energetic sanitary policy stands for exerted a baleful influence. In addition, the finances of Egypt were in a most parlous condition, and there was actually very little money available for health measures. In those days, also, fanaticism was more powerful than is now the case and it was difficult to remedy the state of the mosques, which was often deplorable and afforded every facility for the spread of disease.

THE DEPARTMENT OF PUBLIC HEALTH.

In 1883 Mr. Clifford Lloyd created a Department of Public Health, and its first director was one who, in later days, delivered the Chadwick lectures with much acceptance, Dr. F. M. Sandwith, a man who ever placed duty before self and who, as Lord Milner says, "was got rid of by a rather ignoble intrigue due to the excessive zeal which he had shown in the dismissal of corrupt subordinates." Sandwith, however, set the sanitary ball rolling, and though its pace slackened a fresh impetus was imparted to it when Rogers Pasha, now Sir John Rogers, assumed control. He did a great deal for sanitation in Egypt, and his successor, Sir Horace Pinching, carried on the good work. It is unnecessary to enter into particulars as regards the various schemes put forward and completed during the period when these two able administrators fought disease and death in Egypt. Our theme is the problem at the present time for, despite all they accomplished, they were very far from attaining anything like perfection, and those who followed them found plenty to do and left plenty to be done. At the same time, it is necessary to note that the cause of hygiene was helped indirectly, but very effectually, by the manifold reforms carried through in other departments of the Government service. The fact that Egypt was rescued from bankruptcy and became financially prosperous aided sanitation, the spread of education helped it in large measure, the great development of public works, and especially of road-making, water-supply, and drainage schemes, assisted enormously; in other words, sanitation shared in the benefits attending the general quickening, as must ever be the case. It is essential that the hygienist should possess a spirit of sweet reasonableness and recognise that money expended on other services than his own may often be regarded as chinking in the sanitary coffers, though I admit it is not always easy to cultivate so philosophic a spirit, and that too much complacency in this direction is strongly to be deprecated.

Shortcomings of the Administrative Scheme.

Bearing all these points in mind, and remembering that lethargy, corruption, ignorance, indifference, and intrigue are always likely to hinder sanitary progress in Egypt, as indeed they do in other countries, let us see in what directions the lately existing scheme of health administration—a scheme, be it noted, admirable in many respects and the outcome of years of experience and labour—fell short of the ideal and thereby contributed its quota to the causes which we are considering.

In order to do so it is necessary to discuss the scheme itself, and I direct your attention to the graph. (Graph 1.) As I have indicated, this scheme, or rather its execution, has gone a long way towards solving health problems in Egypt, and in its discussion attention will be drawn not only to its shortcomings, such as they are, but to its virtues, while points which may be obscure to those unfamiliar with the land of the Pharaohs will be elucidated so far as this is possible in the time at our disposal.

It will be seen that the Department of Public Health is merely a section of the Ministry of the Interior. It does not, so to speak, stand on its own legs. In "Modern Egypt" Lord Cromer devotes a chapter to the interior and a subsidiary chapter to its three sub-departments. These are;

(1) prisons; (2) slavery; (3) medical and sanitary administration. There in a nut-shell you have one of the chief causes of the problem of hygiene in Egypt—lack of adequate and fitting status for the organisation that controls the factors governing the health of the nation.

Subordinate Position of Sanitary Administration.

One need not feel surprised that so notable an administrator as the late Lord Cromer was content with such a situation, was satisfied, or apparently satisfied, to class a great sanitary administration along with the sections of Government which look after prisoners and slaves. Lord Cromer belonged to a school which was not greatly concerned with health problems, save when waves of epidemic disease disturbed their peace of mind and the well-being of the community. Though by no means indifferent to medicine and hygiene and a good friend to the scientist, he perhaps scarcely realised the full significance of sanitary work in such a country as Egypt. I am quite certain he was infinitely more interested in Greek odes than in the pathogenic protozoa. Small blame to him. The day he represented is only now passing and it is passing slowly and with some reluctance. The medical profession itself is largely the cause of a conservatism which has hindered progress in hygiene, which has obscured the truth enshrined in Emerson's famous dictum, "The first wealth is health." The Faculty from time immemorial has been much more interested in the cure than in the prevention of disease, though, to its honour be it said, medicine is the profession above all others which cuts its own throat, which has always endeavoured to efface itself by following an unselfish tradition. But it is not only the clinician who, by indifference and lack of interest, has put his spoke in the sanitary wheel. The hygienist himself has too often been to blame, for how often has he asked for impossible things in an impossible way! His outlook has frequently been narrow, and it is no wonder that men like Cromer, who were accustomed to take a wide survey of life and of affairs, who had to weigh the claims of many applicants for money, and who, in addition, could scarcely be expected to appreciate fully how the increase of scientific knowledge had placed new and effective weapons in the hands of the sanitarian—it is not surprising, I say, that such men were a little apt to be suspicious of the enthusiastic reformer whose constant cry was that if he only got the funds he would achieve hygienic miracles.

The difficulties of the administrator in this respect are well set forth in the concluding chapter of that very interesting book by Dr. Malcolm Watson "Rural Sanitation in the Tropics." Therein he quotes the very words of the famous Egyptian Pro-Consul to good effect. It is, however, at last being understood that the welfare of a nation is closely bound up with the health of its people. Nowhere is this more true than in Egypt and nowhere is there a greater necessity for establishing a Ministry of Health. In this connexion let me read you a portion of a valuable memorandum on the subject by Dr. Cyril Goodman, late Assistant Director-General of the Egyptian Public Health Department, and one, truth to tell, who is much better qualified to deliver these lectures than I am, for he knows Egypt intimately and has done much to guide her health policy along sound and practical lines. He says:—

"As there is no public opinion in the country demanding health reform the whole of the driving force in favour of health measures must come from within the Government itself, or rather that part of the administration charged with public health duties. The progress attained is directly proportional to the influence which can be brought to bear upon the Government.

"As at present constituted the Department of Public Health has no direct influence upon the policy of the Government; it is represented neither upon the Council of Ministers nor upon the unofficial Council of British Advisers which with the High Commissioner go to make up the somewhat informal system of government in Egypt. The High Commissioner, except in so far as he is controlled by the Foreign Office, is possessed of supreme authority in so far as he cares to exercise it, but the representative of the Public Health Department has no right of access to him to press forward public health measures or to oppose measures detrimental to the health of the country.

"The Public Health is a subordinate Department classed with and often below the Customs, the coastguards, the Public Lands and the Survey Departments, which, however important in themselves, have very little concern with the public policy of the country. The result of this system, or lack of system, is, as might be expected, a reign of disorganisation and misunderstanding. No opportunity is ever offered for the consideration of the health problem as a whole; lack of coördination between the various departments has led to conditions injurious to health which might have been easily remedied at the outset; individual public health measures are presented and pressed forward second- and very often third- or fourth-hand or not presented at all—killed or mutilated for some unknown reason by some unknown official of the superior hierarchy; measures with a strong public health bearing are discussed and agreed to without consultation of the department, which is left with the choice between silence and a belated and irritating protest. In short, the position of the department is very much that of an indignant subscriber whose only resource if he disagrees with the policy of his paper is to write a letter of protest which his editor may or may not insert."

The Burden of Petty Detail.

This is a serious indictment of the Government machinery, but I believe it to be fully justified, and I should say that this cardinal fault of lack of status is the chief of those more obscure causes which to-day render the question of health in Egypt as paradoxical as is the country itself.

In the past the Director-General has been burdened with petty details, a state of things which has tended to prevent him devoting sufficient attention to larger questions of policy and to the bearing of scientific discovery and progress on the affairs of his department. No separate section of medical intelligence has been available, and though, as will be seen, the Director of the Public Health Laboratories has ably filled the post of technical adviser in addition to his other duties, it is essential in these days of rapid change and widespread activities to have a properly organised bureau of information attached to every large department of hygiene. Egypt has suffered from the want of such an institution, and there has also been an absence of means for enlightening both Government officials and the public generally as to the nature and prevalence of preventable disease and the measures which have been and should be taken to combat it.

GROUPING OF SANITARY ADMINISTRATION.

Turning again to the graph and the Central Administration, we see that there are four chief sections of work, each controlled by a director. These are the sections dealing respectively with general sanitation, with hospitals, with ophthalmic hospitals, and with epidemics. It is necessary to consider them briefly in detail.

I. *Section of General Sanitation.*

Probably nobody but the director of Section I. has any real conception of the multifarious duties which fall to his share and the difficulties with which he is constantly beset. These difficulties, though largely due to the presence of the Capitulations, the state of sanitary law in Egypt, and in some instances to the flatness of the land, its water-logged condition, and the comparative scarcity of fuel, are also caused by an overloading of the section with matters which should be dealt with elsewhere. As a result the ill-effects arising from a chronic paucity of staff are intensified. For example, a great deal of the work concerned with cemeteries is, strictly speaking, not sanitary work at all, and should be relegated to the State Domains Administration or at the present time to the Survey Department. Later on, when local self-government has become a power in the land, as must needs be the case, the municipalities and village councils will doubtless assume control of the cemeteries in their respective districts. Anyone versed in public health administration will wonder why the words "medico-legal work" appear on the list of subjects classed under general sanitation, and no one not conversant with Egypt could read the riddle. It is no use saying more about the matter here, for the question is intimately bound up with the duties of the Markaz doctor, and will be considered when we discuss the rôle which that indispensable person plays in the provincial organisation.

Prostitution figures in the list, possibly with more reason, for at last, at long last, the nations are beginning to understand all that the results of prostitution cost them in the way of expense, inefficiency, wrecked homes, disease, degradation, and death. Still, prostitution is so intimately bound up with venereal clinics and hospital treatment that its sanitary control is undoubtedly better exercised elsewhere than in the company of offensive trades, insanitary buildings, drains,

PRESENT ORGANIZATION OF THE DEPARTMENT OF PUBLIC HEALTH.

GRAPH No. 1.

CENTRAL ADMINISTRATION.

MINISTER OF THE INTERIOR.

UNDER-SECRETARY OF STATE.

DIRECTOR-GENERAL.

ASSISTANT DIRECTOR-GENERAL.

Discussion with Director-General of matters of general policy of Department. Legal questions, drafts of laws, regulations, Departmental Orders, instructions, circulars, personnel questions, control of Departmental correspondence, Health Offices, prints and publications, stationery, permits to practise the medical and allied professions, Budget, Stores questions, Pharmacy questions and law, Cairo Scavenging and Watering Service, Cairo and Alexandria water questions.

Director, Section I.

Registration of births and deaths (acts as Registrar-General).
Vital Statistics.
Etablissements Insalubres.
Cemeteries:—
- Establishment of new.
- Delimitation of old.
- Disaffection of old.
- Exhumation and transport of bodies.
- Private tombs.

Dépotoirs for street refuse and sewage.
Sanitation of Government Buildings.
Sanitation of Schools and *Kuttabs*.
Fencing of waste land.
Water supplies.
Birkas.
Medico-legal work.
Prostitution.
Drainage:—
- Public latrines.
- Drainage connections, etc.

Vidange.
Sanitation of Mosques.

Director, Section II.

General Hospitals.
Dispensaries.
Infectious Hospitals.
Hospital statistics.

Inspectress.

Children's Dispensaries.
Maternity Schools.

Director, Section III.

Ophthalmic Hospitals, permanent and travelling.
Ophthalmic inspection of Schools.

Director, Section IV.

Epidemics.
Disinfection.
Vaccination.
Pilgrims.
Passenger control.
Mûlids.
Malaria.
Barbers.
Control of Medical Services of the Frontier Districts Administration.
Infectious diseases statistics.

Director, Administrative Service.

Director of Accounts.

Director, Public Health Laboratories:—
- Bacteriological.
- Chemical.
- Vaccine Institute.
- Antirabic Institute.
- Water Control Service.

Director of Stores.

Chief Sanitary Engineer.

Chief Inspector of Pharmacies.

Chief Inspector, Cairo Scavenging and Watering Service.

PROVINCIAL ORGANIZATION.

English Divisional Inspectors who inspect all sanitary and General Hospitals work in the Provinces and report to the Director-General.

Inspectors of Ophthalmic Hospitals.

Hospital Medical Officers and *Hakimas*.

Hospital Medical Officers.

Medical Officers of Health (of Cairo and Port Said), or Health Inspectors (Suez and Damietta) of Governorates.

Qism Medical Officers in Cairo.

Barbers and *Dayas* in Villages attached to Governorates.

Mudiriya Health Inspectors.

Special Epidemic Staff, disinfectors and rat-catchers.

Markaz and Outpost Medical Officers.

Barbers and *Dayas* in Villages.
Burial permits.
Vaccination.
Inspection of Deaths.

Registration of births and deaths is done by Omdahs and Sarrafs.

WORK OF MARKAZ DOCTOR

1. Infectious diseases.
2. Medico-legal examinations and reports.
3. General Sanitation.
   - (a) *Birkas*.
   - (b) Inspection of Schools and *Kuttabs*.
   - (c) Mosques' water system inspection.
   - (d) Sanitary reports on Government Buildings.
   - (e) *Arrêtes* for regulation of water intakes.
   - (f) Street cleaning.
   - (g) Slaughtering sites.
   - (h) Enclosure of waste lands.
   - (i) Selection of *dépotoirs* sites for town refuse and fosse contents.
4. *Etablissements Insalubres*.
5. Control of registration of births and deaths.
6. Vaccination.
7. Dispensary.
8. Prostitutes' examination where no hospital exists.
9. Cemeteries:—
   - Sites for new.
   - Disaffection of old.
   - Exhumation of bodies.
   - Private tombs.
10. Public Health Delegate on Local Commission.
11. Contraventions against the law regarding the practice of medicine, etc.
12. Pilgrims.
13. Passenger control.
14. *Mûlids*.
15. Examinations and reports on sick Government employees.
16. Examination of *Ghaffirs*.
17. Inspection of deaths (uncertified).

water-supplies, conservancy arrangements, and all the various matters which are sometimes for the sake of convenience, and not too inaptly, classed as nuisances. A possible objection to the use of this term may, however, be found in the fact that the harassed director of this section would often gladly extend it to include officials of the Ministries of Finance and Justice, who, possibly through no fault of their own, are brought sharply into conflict with him.

It is undoubtedly along the lines mentioned in this section that there has been the least progress in the past, and it is probable that general sanitation presents the most difficult of all the problems which have to be solved. The hygiene of the village, of the native quarters in the cities and large towns, the destruction of flies and mosquitoes, the control of food, the sanitary regulation of buildings are all included in this part of the health campaign and, as has been hinted before, it is no easy matter to hustle the East.

II. *Section of General Hospitals.*

Hospitals, except those for infectious diseases, do not usually come under a public health administration, but you will see that Section II. embraces general hospitals, dispensaries, and maternity schools. The department whose work we are considering would probably in other countries than Egypt be termed the Department of Medical Services, for it is concerned with all matters affecting health. It is, I think, to the credit of those who christened it that they gave it a comprehensive title and one which brings prominently into notice the hygienic side of the work. It is not, however, the best name. That, let us hope, will soon be applied and will entail a radical change converting the department into a ministry—a Ministry of Health.

Most of the general hospitals under the Public Health Department are satisfactory, but there are not enough of them. This is specially true in the case of the larger provincial towns. The hospital is no longer looked upon with dread and suspicion. Not so long ago most of the lower class Egyptians certainly believed that a suitable hospital motto was: "All hope abandon ye who enter here," but happily that day is past and now the cry is for more beds and yet more beds. Hospitals, however, cost money and there's the rub! The Central Treasury has not a chest of bullion like the widow's cruse, and yet money must be found. Here, then, is another problem, the only solution of which lies in the establishment of local self-government and local taxation; measures still in their infancy in Egypt but capable of great development.

When this occurs it will be possible to provide more permanent hospitals for *infectious* disease. These are badly needed, for whatever the future may have in store, it will be long before communicable disorders cease to be one of the plagues of Egypt, and though certain of them are, perhaps, best treated in emergency hospitals others require the comfort and hygienic surroundings associated with a permanent building. Both classes of hospital suffer to some extent from a lack of sufficiently frequent and skilled inspection. Dispensaries, and more particularly children's dispensaries, are amongst the most useful health institutions in Egypt, but there are far too few of them, especially considering that the provision for children's beds in the general hospitals is inadequate. There is also a lack of beds for gynæcological cases, and a great need for women's out-patient clinics throughout the country. You will see that maternity schools figure in the list. There are six of these, but that number is not sufficient. Owing to the harem system in Egypt, the proportion of maternity cases attended solely by midwives is very high, amounting almost certainly to over 90 per cent., and at present the training of the dayas or midwives is most defective, while the mumarridas, though well trained in nursing and midwifery at the Kasr-el-Aini Hospital in Cairo, have, partly as the result of having long been called hakimas, been in the habit of practising medicine as well as midwifery, and certainly require to have their duties defined and their activities controlled. There is good reason to believe that they often pass from a case of infectious disease to a childbirth without taking any precautions whatsoever. The result of such a state of things can readily be imagined.

One cannot leave the question of children's dispensaries and maternity schools without paying a tribute of admiration to the excellent work performed by the inspectress of the Public Health Department in connexion with these institutions. Taking this hospital section as a whole, it may be said that, while a great deal has been accomplished, it yet furnishes a good many of the causes which help to make the health problem so pressing and so difficult to solve. There are errors of omission, there are errors of commission, and at a later date we will consider how these may perhaps be rectified or at least in some measure minimised.

III. *Section of Ophthalmic Hospitals.*

Turning to Section III. we find we are again concerned with hospitals, but with hospitals of a special class. We are at once in touch with a great and beneficent charity, excellently organised, admirably conducted, which has brought relief and cure to thousands, which many have good reason to bless, and which no Britisher can study without a feeling of pride and satisfaction. If the British occupation of Egypt had resulted in nothing beyond the establishment of the ophthalmic hospital system, it might still have been claimed for it that it had conferred a great boon upon the inhabitants.

Prevalence of trachoma.—This campaign, however, owed its inception to private philanthropy, for at first the expenses were defrayed out of a fund provided by Sir Ernest Cassel. This was in 1903, and prior to that date practically nothing was done for eye diseases in Egypt, although no less than 4½ per cent. of the total population was blind in one or both eyes. At first there was only one travelling hospital, but the zeal, energy, and skill of the director soon led to a much larger organisation, and at the present time there are 13 permanent eye hospitals and five travelling hospitals, with a staff of 29 doctors, carrying on a most beneficent prophylactic and curative work. These hospitals also serve as training centres in ophthalmic surgery, and many medical men have passed through the post-graduate courses held in them. A visit either to a permanent or temporary ophthalmic hospital is, as I can testify, full of interest. Women and children form the greater number of the patients who suffer from trachoma, trichiasis, corneal opacities, cataracts, and indeed every form of eye affection. Let us hope that those who have still their sight or whose vision—praise be to Allah!—is restored benefit from what they see of the cleanliness, smartness, and order of these model hospitals. The people flock to them, 81,000 patients being now treated in them annually, and, best sign of all, for imitation is the sincerest flattery, various provincial councils have established ophthalmic hospitals of their own, while the medical service of the Ministry of Waqfs, a Ministry which controls large funds from Moslem sources earmarked for charitable purposes, possesses a special eye hospital at Kalaoun in Cairo. As the sectional director reports, "the provision of means of ophthalmic relief is one of the few things besides education in which the Egyptian has taken a keen interest, and it is frequently stated in native circles that the provision of ophthalmic hospitals reflects more credit on an individual or group of individuals than the building of a mosque." All this is very gratifying, but there is still need of expansion. The provinces of Qena, Assuan, and Qaliubia have been left out in the cold, and there the poorer classes suffer, and have, so far, little chance of remedy. But the section is not only concerned with hospital work. Its activities have extended to the Government primary schools, for it has been recognised how important it is to obtain trachoma cases at an early stage and cure them before irremediable damage has been done. Actually 90 per cent. of the pupils show signs of the disease either in an active or passive form. The pressing question now is to apply the same methods of inspection and treatment to the kuttabs, or infant schools. It will cost £E.40,000 per annum to do so, but it is well worth the money, which should be obtainable from local sources.

Campaign against ankylostomiasis.—Yet another duty devolved on the ophthalmic section when at the instance of the late Lord Kitchener it undertook a campaign against ankylostomiasis not very long before the outbreak of war. As the Egyptian Government did contribute something towards the expenses of this campaign the Britisher may perhaps view it with feelings less mingled than those with which he regards other campaigns against the hookworm in various British Colonies and Protectorates, or, indeed, that waged under the auspices of the Church Missionary Society in Egypt itself. In this case, as elsewhere

throughout the world, Great Britain has been in large measure content to allow its American cousins, or as one now might almost say, brethren—brothers in arms at least—to assume its responsibilities and to do work which, rightly speaking, it should have done. Whatever may be our views as regards the utility of the methods employed (and I may say that not a few believe that it would be better to concentrate attention on ankylostome breeding places and not on the victims of the disease)—whatever our views, all honour must be ascribed to the Rockefeller Institute for what it has achieved, not only in the States and in countries under the Stars and Stripes, but in British Colonies and Protectorates. We owe it a debt of gratitude, but surely it is strange that the British Empire, which is not lacking in millionaires and which stands *in loco parentis* to hundreds of thousands of sufferers from the hook-worm, should complacently accept this gift of money and of workers from America, and do little more than afford facilities for treatment and research. I confess it has always seemed to me an attitude unworthy of a world-wide Empire which, thanks to Sir Patrick Manson and the presence of our far-flung possessions, was the pioneer nation in the study and treatment of tropical diseases. Let us hope that once we all settle down this reproach will be removed, and that we will take up such part of the white man's medical burden as rightly falls to our share.

IV. *Section of Epidemic Diseases.*

We have already paid a well-merited tribute to the efficiency of Section IV., which controls epidemic disease, and from the list you will see the various branches of the work with which it is concerned. Outbreaks of typhus and relapsing fever are seasonal in Egypt, and during the epidemic season you will find scattered about the country the temporary hospitals or cordons run by this section. They are simple structures, but are well designed to cope with emergencies and they combine efficiency with economy. There can be no higher praise. Similar hospitals deal with plague patients, while this section has a special epidemic staff in the provinces, where it also possesses disinfectors and rat-catchers.

Vaccination, a most important duty, falls to its share, and it is ever bustling and busy, as indeed it must be, for the motto when dealing with epidemic disease, especially in a country like Egypt, must ever be, "Strike early, strike quickly, and strike hard."

You will notice that pilgrims and passenger control figure in the list, and let me say at once that this has nothing to do with international quarantine. The control is exercised over all passengers arriving from cholera-infected countries once they are safely ashore. It supplements the work of the International Quarantine Board, of which it is convenient to speak here, though very briefly. It will be remembered in our first lecture that we began by considering the part which Egypt plays as a filter for communicable disease. This filtering action has in the past been conducted, and very well conducted, under the ægis of a somewhat heterogeneous body, over which presided for many years a man of brilliant parts, with the pentecostal gift, with many of the qualities of genius and an abundance of tact and discretion, a man whom, alas! the sea which he loved so well and with which he had so many dealings claimed for its victim, as it has claimed so many in the late war. I refer to Sir Armand Ruffer, under whose guidance the Board guarded Egypt faithfully and well. His monument is El Tor, the great quarantine station which he established in the Sinai Peninsula, and where he encouraged and promoted research work upon cholera, plague, and dysentery. In addition, the Board carried out much port work at Abu Saad near Jeddah, at Suez, at Port Said, and at Alexandria. It may be said that it did not control the Hedjaz railway, which had its land lazaret at Tebuk, nor did it look after Indian pilgrims, for whom the Indian Government provided a quarantine station at Camaran, a station wiped out by the Turks.

As it acted under the terms of the Paris Convention the Board could only apply quarantine against cholera-infected ports and not countries, and yet a port might be free and part of the country to which it belonged infected. Hence the Epidemic Section could furnish most useful help by inspecting and registering passengers on arrival from cholera-infected countries. Pilgrims also returning after quarantine at El Tor were dealt with, and medical officers of the places to which they were returning were notified so that surveillance could be instituted, and, if necessary, specimens taken for bacteriological examination.

Mulids are fairs, and great nuisances as centres of infection. The other items do not call for special notice here. We will meet with the barbers in due course, while the Frontier District Control has to do with new conditions arising out of the war.

On the whole it may be said that this section rather solves than creates problems. It saves lives and it saves money, many lives and much money, and few English folk in Egypt outside the Public Health Department know much about it or its work. The village Omdehs and Sheikhs, however, know all about it, and, I believe, usually appreciate these mushroom hospitals of wood and matting.

OTHER SERVICES: PUBLIC HEALTH LABORATORIES.

So much for the four sections. Of the other services which you observe also form part of the central administration, I propose to consider only two, the Public Health Laboratories and the Inspectorate of Pharmacies.

The laboratories, which are under a most capable director, and which have rendered great service to the cause of health in Egypt, were started in 1896 by Sir John Rogers, and from modest beginnings have attained respectable proportions. There is, however, a very pressing need for an extension in the accommodation provided, especially as regards the chemical and bacteriological laboratories. At present there is no protozoologist, and yet the pathogenic protozoa play no unimportant part in Egyptian pathology, as witness *Entamœba histolytica* and *Leishmania tropica*, the causes respectively of amœbic dysentery and oriental sore.

You will note that small-pox vaccine is manufactured at an institute attached to the laboratories, while there is also an Antirabic Institute—a very necessary establishment in a land where rabies is common and where the bites received from rabid dogs, wolves, and jackals are often facial and severe. It is a very interesting place, this institute, with its crowd of patients, mostly blue- or black-garbed fellaheen or ragged slum-dwellers, but with a sprinkling of all classes of the community. The dexterity with which the inoculations are given is remarkable, and many patients must yearly be saved from the horrors of hydrophobia.

The Vaccine Institute, though small and somewhat archaic in the matter of special apparatus, is well run and fulfils a very useful function. Buffalo calves furnish the supply of lymph which, from the results obtained, evidently possesses good immunising powers. In a country like Egypt, where small-pox is rife, such an institution is essential and it should be kept up to date in every particular.

Allowing for the value of the vaccine lymph produced, deducting the fees paid for treatment at the Antirabic Institute and those received for analyses, the annual upkeep of these excellent laboratories only amounts to about £E.5000. As their director has modestly stated:—

"For this sum the Government obtains a reasonably efficient bacteriological and chemical service, including the following regular services: 1. Bacteriological diagnosis for the whole of Egypt except Alexandria. 2. The diagnosis work of the city of Cairo. 3. A regular bacteriological and chemical control of the Cairo water-supplies. 4. The analytical work of the Inspectorate of Pharmacies. 5. All bacteriological and chemical examinations required for the General Sanitation, Epidemic, and Hospital Sections of the Department and for the Cairo Inspectorate, the work for the latter including a regular milk control and a bacteriological control of the Cairo aerated water and ice supplies."

Here indeed is a worthy record of work, and, in addition, research is conducted as opportunity offers, while the director acts as scientific adviser to the department which he serves.

The Water-Control Service, which comes under the Laboratories, is yet in its infancy, but it is an important development, for if water plays a paramount part in the well-being of Egypt, it is one of the chief sources of trouble from a hygienic and economic standpoint, and water-supplies everywhere require to be regularly inspected and adequately controlled. Moreover, a careful study is required of the manifold problems connected with drinking-water in Egypt.

Inspectorate of Pharmacies.

It is, perhaps, a little surprising to see an inspectorate of pharmacies figuring as an important branch of public health administration, but pharmacies play quite a peculiar part in Egyptian life, and many of them require close supervision. Some day someone may write a romance of Egypt with pharmacies well in the foreground. It is doubtful if permission could be obtained for the publication of such a work, but if it ever saw the light of day what tales would be forthcoming about the smuggling of forbidden drugs, about opium and cocaine, about the sale of aphrodisiacs, abortifacients, and patent medicines, about the trade in spices and perfumes, about poisons, and especially those grown in Egypt, such as hyoscyamus and datura. All kinds of abuses exist, for pharmacists, ignorant of medicine, usurp the duties of the medical man, and drugs are adulterated or tampered with to the detriment of purchasers. The Inspector of Pharmacies has his own problems to face, and he will be greatly helped when the Capitulations are abolished, when new legislation is introduced, when private laboratories are better controlled, when facilities for the inspection of pharmacies are increased, and when an official pharmacopœia is duly recognised in Egypt.

SEVERANCE OF PROVINCIAL ORGANISATION.

The graph (No. 1) would seem to indicate that our proper course would now be to discuss the provincial organisation, but before doing so it is necessary to point out that of late years the Public Health Department has suffered some loss in efficiency through a tendency towards the severance of certain of its services from the Central Administration. In addition, some government medical services in Egypt have never been within the fold. As examples of these statements I may cite the medical services of the railways, police, prisons, and coastguards, and what is known as the Central Medical Commission, which is concerned with the medical examination of candidates for Government posts.

As the special Public Health Commission reported last July:—

"A department like that of Public Health may be likened to one of the Great Powers with many possessions. So long as the central grip is firm and the responsibilities fully recognised the component parts will remain united, but the first sign of decadence and weakness is often a tendency towards disruption."

The proposals submitted for checking this tendency and remedying the existence of this state of affairs will be dealt with in due course. Meanwhile, it seems advisable to say a few words about the municipalities and local commissions which, with the provincial councils to which passing reference has been made and which are like county councils in England, form the hope of local self-government and town development in Egypt. On this account it is upon them also that the responsibility of grappling with many sanitary problems will assuredly fall.

Functions of Municipalities.

Time will not permit an historical survey of the foundation and progress of the municipalities and local commissions; they come under the Ministry of the Interior, but are quite distinct and separate from the Public Health Department. Yet they are largely concerned with sanitary engineering and with public works which have a distinct bearing on the health of the people—such works, for instance, as the care and maintenance of roads and cemeteries, water-supply, scavenging, and the superintendence of slaughter-houses. They are also concerned with lighting, and let it always be remembered that a dark town is a dirty town in more ways than one. The municipalities exercise their functions in some of the larger provincial towns, the local commissions in 35 of the smaller towns of Egypt. They are in some ways analogous to municipal councils and town councils in this country, and are administered in an able manner by a British director, who happens, fortunately, to be a medical man. Already they have accomplished much good work, some of which we shall look at in a moment, and, considering the ever-increasing burden of expense in public health matters, a load which no Central Treasury can possibly shoulder, it is clear that the municipalities and local commissions must remain apart and form the nucleus of a future scheme whereby the municipalities will manage their own health affairs under the guidance and advice of the Ministry of Health.

OBSERVATIONS ON AORTIC DISEASE IN SOLDIERS.

BY THOMAS F. COTTON, M.D. MCGILL.

(*A Report to the Medical Research Committee.*)

DURING the past winter an unusually large number of soldiers presenting signs of aortic disease were admitted to the Sobraon Military Hospital, Colchester. The majority of these were young men who had been passed fit for general service, and all but a few had seen active service abroad. The opportunity seemed a favourable one for making a careful study of the symptoms associated with this form of cardiac affection, and their significance; and of the signs used to recognise this valvular defect, and their value in estimating the stage of development of the disease.

Analysis of 50 Case Histories.

In dealing with the symptoms I have analysed the case histories of 50 soldiers with signs of aortic insufficiency. All of them were submitted to a complete physical examination, and the description of the signs is based on this examination. The exercise tolerance was determined in these 50, and 17 others, by observing their reaction to a simple exercise test; in 8, graded exercises as employed in the treatment and sorting of the D.A.H. cases, were used as a test of physical fitness. The histories which these men have given throw considerable light upon the causation of the symptoms which they complain of. If they can be interpreted as symptoms arising not from loss of cardiac reserve, and can be explained by some other cause than the valvular defect, then the difficult task of forecasting the future welfare of the patient suffering from this heart malady becomes an easier one.

I am not concerned here with the causation of the symptoms in patients with advanced aortic disease. These observations refer to a group of soldiers with an average age of 31 years; men who have been in the Army for an average period of 2 years and 7 months, including 1 year and 7 months' military service overseas. These men presented no signs of venous engorgement, and the pain which they complained of was not anginal in character or distribution.

In 30 the average duration of symptoms was 1 year and 7 months; in 12 the symptoms extended over a longer period, and were present before enlistment. Half of these had been in the firing line, 4 had not been abroad, and with the remainder only light duty at the base had been performed. Before enlistment the occupation had been a heavy one in 36 per cent., moderately heavy in 41 per cent.; and light work only in 23 per cent.; 62 per cent. played games such as football, cricket, and tennis before enlistment. Only 12, or 27 per cent., gave a history of rheumatic fever, a very low incidence. One gave a history of syphilis. In 35 the complement-fixation test was done, and of these the reaction was positive in 8, or 23 per cent.; all of these 8 were over the age of 40 but one, who was 22.

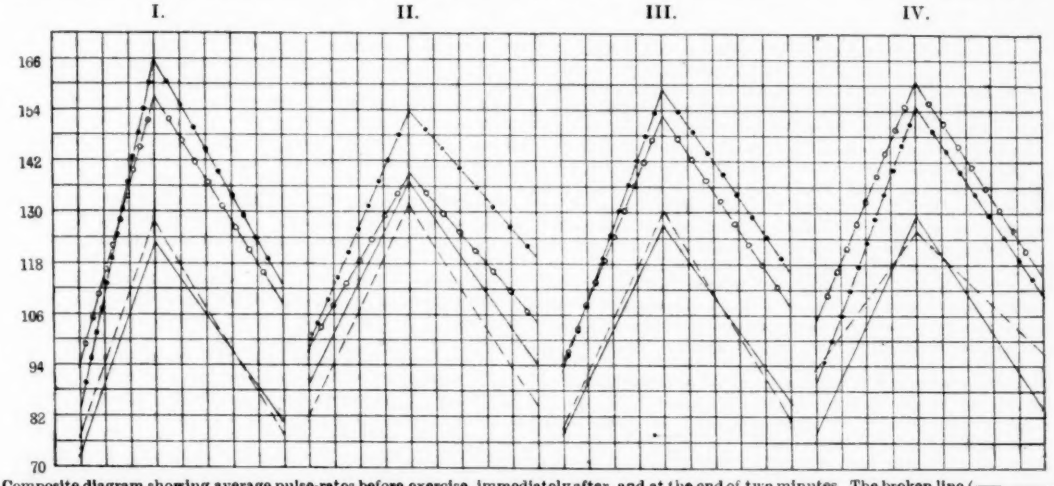
Determination of Exercise Tolerance.

In 27 of those with slight incompetence and 16 with free regurgitation the exercise tolerance was determined by observing the response after a brisk walk up and down 20 steps twice. Distress after the effort accompanied by a rapid pulse-rate with a slow return to the pre-exercise rate were considered signs of poor exercise tolerance. If there were no complaints, and no obvious signs of distress, with a moderate increase of pulse-rate, and a quick return to the pre-exercise rate—i.e., less than two minutes—the reaction was looked upon as good. In 24, 12 with slight incompetence and 12 with free regurgitation, the symptoms alone, after the same exercise test, were used in estimating the physical fitness; the pulse-rates were recorded in these with a Mackenzie polygraph for five minutes before the exercise with the patient sitting, and the average was taken as the pre-exercise rate immediately after the effort, and at the end of two minutes. In those of the first group, where the tolerance was determined by the symptoms and the pulse-rate, 14 with slight incompetence of the aortic valve had good exercise tolerance, and the average pulse-rates were 77 before the test, 128 immediately after, and 78 at the end of two minutes; 13 had poor exercise tolerance, and the average pulse-rates were 93, 157, 109; 10 with free regurgitation had good exercise tolerance, and the pulse-rates 72, 123, 81; 6 had poor tolerance, and the rates were 84, 166, 113. Of the second group, with the tolerance determined by the symptoms alone, 8 with slight incompetence had good exercise tolerance, with average pulse-rates of 82, 132, 85; 4 had poor tolerance, and the rates were

97, 139, 105; 5 with free regurgitation had good exercise tolerance, with average pulse-rates of 89, 137, 94; 7 had poor tolerance, and the rates were 99, 153, 120. If these two groups are combined, it will be seen that of the 39 early cases the reaction is good in 22, and the average pulse-rates are 79, 130, 81; the reaction is poor in 17, and the pulse-rates are 94, 153, 108; 28 had free regurgitation, with good tolerance in 15, and pulse-rates of 77, 127, 86; 13 poor tolerance, and pulse-rates of 92, 159, 116.

Diagrammatic Representation of Results.

In the diagrams I have plotted these average pulse-rates. In *Diagram I.* the broken line and the line with the circles represent the average pulse-rates of the 27 early cases, with the tolerance determined by the symptoms and the pulse-rate; the unbroken line and the line with the black dots represent the pulse-rates of the 16 with free regurgitation and the tolerance determined in the same way. The figures at the side are the pulse-rates. Where the tolerance is good the summits of the curves are at approximately the same height, and at a much lower level than those with poor tolerance; the actual increase in rate after effort is the same.



Composite diagram showing average pulse-rates before exercise, immediately after, and at the end of two minutes. The broken line (—— —— ——) indicates slight regurgitation and good tolerance; the line with circles (——o——) indicates slight regurgitation and poor tolerance; the continuous line (———) indicates free regurgitation and good tolerance; the line with black dots (——•——) indicates free regurgitation and poor tolerance. I. Tolerance determined by symptoms and pulse-rate. II. Tolerance determined by symptoms alone. III. Curves I. and II. combined. IV. Aortic disease, including those with slight regurgitation and free regurgitation, with tolerance determined as in I. and II. and D.A.H. (the broken line and the line with circles indicate the D.A.H. cases; the continuous line and the line with black dots indicate those with aortic disease).

When the tolerance is poor the increase in rate is considerably greater than in those with good tolerance, and the rate is at a higher level in those with free regurgitation than in the early cases.

In *Diagram II.* the pulse-rates are those of the 24 with the tolerance determined by the symptoms alone. The summits of the curves are slightly higher than in Diagram I. when the tolerance is good, and at a lower level when the tolerance is poor. The high points are not so far apart, and the peaks are lower in those with poor tolerance than in Diagram I.

In *Diagram III.* I have combined Diagrams I. and II. In those with good tolerance the peaks are low and the rise is the same. In those with poor tolerance the peaks are considerably higher, with a greater rise after effort in those with free regurgitation, and a fall after two minutes which does not reach the pre-exercise rate.

In *Diagram IV.* I have plotted the pulse-rates before and after exercise of 67 patients with aortic incompetence—37 with slight regurgitation and 30 with free regurgitation; and also the pulse-rates after the same exercise of 25 unselected D.A.H. cases, with the exercise tolerance determined by the symptoms alone, and the pulse-rates recorded with a Mackenzie polygraph. In those with good tolerance the pulse-rate rises to approximately the same height, both in the D.A.H. case and in the patient with aortic disease, and at a much lower level than in those with poor tolerance. When the tolerance is poor the level is slightly higher in those with D.A.H., and the fall about the same after two minutes.

In those with slight incompetence of the aortic valve, as compared with those with free regurgitation, the exercise tolerance is good in 56 per cent. of the former and 54 per cent. of the latter. When a comparison is made of the exercise tolerance in all with aortic disease 55 per cent. are found to have good tolerance and 45 per cent. poor tolerance. When the tolerance of the 67 with aortic disease is compared with that of 25 unselected D.A.H. cases, 55 per cent. of those with valvular disease are found to have good tolerance, as against 56 per cent. of those with D.A.H.

The points which I desire to make, and which I think these observations on exercise tolerance clearly show, are these: aortic disease is compatible with good exercise tolerance; when there is an equal degree of distress after effort the increase in pulse-rate is the same in patients with slight aortic incompetence, in aortic disease with free regurgitation where there is no venous congestion, and in D.A.H. cases in whom there are no signs of structural disease.

Three Types of Aortic Disease.

By the symptoms alone aortic disease may be divided into three types: (1) aortic disease without symptoms; (2) aortic disease with a group of symptoms which we term "the effort syndrome"; (3) aortic disease with venous engorgement or angina pectoris.

With aortic disease of the *first type* there are no symptoms, and the condition is recognised by the signs alone. Fully developed incompetence of the aortic valves is compatible with good exercise tolerance; the severest form of exercise can be performed without greater distress than that observed in a healthy untrained subject. The extra load put upon the heart by the reflux of blood through the defective valve is cared for by the large reserve power which a healthy or slightly damaged myocardium possesses. Not until the cardiac muscle has been sufficiently impaired—for example, through coronary or myocardial disease—does the heart fail to bear the extra work put upon it, and with the exhaustion of its reserve give rise to the symptoms of heart failure. The uncomplicated valvular defect, the simple crumpling of the aortic cusps, is not in itself of great consequence. The reason that in so many aortic disease leads to heart failure is that the coronary arteries, or the myocardium, or both, have been damaged by the same agent that has caused the valve defect.

The *second type* presents the effort syndrome group of symptoms. Breathlessness on exertion is always present; this respiratory distress is provoked by an effort which, in a healthy person, would not be complained of. It is absent at rest save in rare instances. Occasionally it is noticed at night in bed, and is described as a choking sensation, a feeling of suffocation; it is sudden in onset and of short duration. This is not to be confused with the nocturnal breathlessness due to deficient aeration of the lungs, nor

the paroxysmal dyspnœa of relative acidosis in cardio-renal disease. It is as frequently met with in the effort syndrome case where there are no signs of structural disease. Palpitation is a common complaint. When provoked by exercise it is felt after the effort; it is associated with an overacting heart and persists as long as the excessive heart-rate is maintained. Emotional stimuli—excitement, fear, pain, joy, &c.—give rise to the same symptom. Palpitation is complained of by many in bed at night; often, but not always, it is noticed when the patient lies on the left side, and disappears with a change of position. In some way it is related to the breathlessness at night for the two symptoms often occur together. Giddiness is present in many. Sometimes it is felt after exercise, as often with change of position, as in bending or suddenly assuming the erect posture. In a few there is experienced in bed at night a peculiar sinking feeling, a sensation of falling through the bed or floor, or actual loss of sense of position, quite like the giddiness produced by effort. Observations upon the blood pressure and pulse-rate have been made to explain this condition. This symptom is caused in some way by an altered cerebral circulation; the mechanism by which it is produced has not been determined. Pain is an important feature of the disease. It may occur after effort, but it is often felt at rest; occasionally it is complained of at night. Some describe it as a stitch in the left chest, or a sharp cutting pain in the region of the left costal border, over the heart, or in the back, while others have a dull boring pain, or soreness over the precordium. Exhaustion after effort is much greater than that experienced by a healthy individual, and lassitude in the morning is a common complaint. Headaches are frequent; they occur in the morning, and are usually frontal in situation. Sweating, flushing, mental irritability or depression, are less constant symptoms. The hands are cold, clammy, cyanosed, and often tremulous, and drops of sweat run down from the axillæ. These are the symptoms observed in soldiers with aortic disease before venous engorgement has made its appearance. Briefly, the symptoms in D.A.H. so-called and in the aortic cases are identical, indistinguishable the one from the other. How are they produced in the aortic cases? If the symptoms in aortic disease of this type arise from cardiac weakness, and are caused by cardiac inefficiency; if they are to be explained by the inability of the heart to carry on its work from myocardial weakness, and the added load put upon it by the reflux of blood from a defect in the aortic valve; if that is the true explanation it is difficult to account for the symptoms in the D.A.H. case where we find no signs of structural heart disease. It might be thought that the two groups differ in their onset of symptoms. Now the symptoms in aortic disease arise from a variety of causes. They appear in a large number after an acute infection—after rheumatic fever, pneumonia, bronchitis, trench fever, malaria, and dysentery. In some gas poisoning is the agent, in others shell shock; some date their symptoms from a severe effort; in others the symptoms are gradual in their onset and cannot be associated with any particular cause. But with the D.A.H. case the onset of symptoms are as I have described for aortic disease; acute infections, gassing, shell shock, effort, and conditions of active service or civil life, all have the same ætiological significance; this, we all agree, has been established. It seems fair, then, to ascribe the symptoms in the group of aortic cases to the same causes, when there is an equally clear history. Do not misunderstand me. I do not speak of the causes of aortic disease; I am dealing now only with the ascribed causes of the symptoms. In both the provocative agents are the same, and in both the symptoms are identical. Here let me add one word about the ætiology of the two conditions; the incidence of rheumatic fever is much higher in aortic disease in those under the age of 40 than in D.A.H., and the incidence of syphilis is higher in disease of the aorta over the age of 40. I have referred at some length to the similarity of the symptoms in the two groups. I do so because I wish to give you the view which we who have worked at Colchester hold; that the symptoms of early aortic disease in soldiers are not produced by the extra work put upon the heart by the valvular defect, but are due to the same causes as are the symptoms in D.A.H. In other words, that disease of the aortic valve in itself gives rise to no symptoms.

Now of aortic disease of the *third type*, where there is venous engorgement or angina pectoris, I shall be very brief. They are not the symptoms of aortic regurgitation but those of heart failure. With venous engorgement we have the symptoms of venous stasis in the pulmonary circulation on the one hand—cyanosis, orthopnœa, and pulmonary congestion; and on the other, the symptoms arising from the failure of the heart to maintain the general circulation—œdema of the extremities, general anasarca with disturbance of the renal and other abdominal visceral functions, cerebral manifestations, and the final moribund state of the human organism. Of the characteristic picture of angina pectoris in advanced aortic disease, I shall only say that it is rarely seen in the presence of venous engorgement, with enlargement of the liver, and with the onset of dropsy the pain disappears.

The Value of Physical Signs.

I have dealt only with symptoms and their significance in aortic disease. The signs are equally important, for they are the guide to diagnosis, and assist us in prognosing the future life of the patient. By the signs alone are we able to diagnose incompetence of the aortic valve. They may be classified as signs of slight insufficiency of the aortic valve, and signs of aortic incompetence with free regurgitation. When the disease has sufficiently advanced, and heart failure has set in, then new signs are added. The most constant sign by which we can recognise early aortic disease is a diastolic murmur. This murmur is best heard at the left border of the sternum at the level of the third rib or third intercostal space. When heard over the aortic cartilage it is more distant; the diagnosis may have to be made when no murmur is heard over this area. During this stage of the disease the heart may be slightly enlarged; frequently, however, there is no increase in the area of relative cardiac dullness. The pulse is not collapsing; there is no conspicuous pulsation of the carotids or the brachial arteries; and the blood pressure range is within normal limits. With the development of free regurgitation chief reliance should be placed upon the character of the pulse: the collapsing, water-hammer, or corrigan pulse. There is throbbing of the carotids and brachials, capillary pulsation is always present, the pistol shot phenomenon is commonly present, the systolic blood pressure is higher and the diastolic is relatively low, and there is material enlargement of the heart. When venous engorgement occurs the signs of venous stasis are added. With the progress of the disease the heart increases in size, its area of relative cardiac dullness may extend to the anterior, mid-axillary line, or further. It is generally held that the dilatation and hypertrophy is mainly that of the left ventricle, and is produced by the extra work put upon this chamber by the reflux of blood through the incompetent aortic valve. Now the signs by which we recognise cardiac enlargement are an uncertain indication of the preponderating hypertrophy in one or other ventricle. Increase in cardiac dullness to the left does not necessarily mean left ventricular hypertrophy, and epigastric pulsation is a very unreliable sign of hypertrophy of the right ventricle. The electro-cardiograph offers means of accurately determining the comparative degree of hypertrophy in one or the other chamber. One frequently observes in electro-cardiographing patients with aortic disease that hypertrophy is equally borne by the two ventricles, so that the normal relationship of the two is maintained, and in some the predominating hypertrophy is in the right ventricle. By weighing separately the ventricles of patients whom Lewis and I had observed during life with signs of aortic disease we were able to confirm the electro-cardiographic records.[1] Such observations do not support the hypothesis that hypertrophy in aortic disease is produced solely by the regurgitation of blood through the defective aortic valve. Some other theory must be sought to explain the causation of hypertrophy in aortic disease. Such observations favour the view that myocardial disease is the chief factor in the production of cardiac hypertrophy, and in the causation of the symptoms of heart failure.

Prognosis in Aortic Disease.

A difficult task awaits those who attempt to forecast the duration of life in aortic disease during the early stages of its

[1] Cotton: Observations on Hypertrophy, Heart, vi., 217.

development. Prognosis becomes easier as the disease progresses and signs of cardiac failure make their appearance. There are certain symptoms, and of these pain is one of the most important, which guide us in estimating the number of years remaining before the final stage of total disability has been reached. Dyspnœa at rest with cyanosis and pulmonary congestion, and pain that is anginal in character and distribution and felt after slight effort, are symptoms that we all recognise as indicating a grave heart affection. The disability here is a total one, and our chief concern is the relief of distress of the patient. The ultimate prognosis is easily made; the immediate one depends upon the manner in which the patient responds to treatment. A large heart means myocardial mischief. By its size one may be helped in estimating the amount of damage which the myocardium has suffered. The final breakdown is likely to occur earlier where there is great increase in the heart's size than in those without much cardiac enlargement. With no signs of heart failure, and only a moderate extension of the left border beyond the nipple line, the outlook is more favourable. The auscultatory signs are not of much help, if any, in prognosing aortic disease in its early stages. We recognise free regurgitation of the aortic valve by the character of the pulse; the quality of the murmur tells us little. It is probable that the damage to the valve is greater where there is free regurgitation, as it is certain that more work is put upon the heart. It may be that the myocardium and the coronary arteries have been injured to the same degree. With the heart not much enlarged the prognosis is less favourable when the pulse is collapsing. It is difficult to prognose with any certainty when the heart is not enlarged and there are no signs of failure. Some have no symptoms with good tolerance; others have symptoms as I have described them, with the physical capacity so reduced that only the slightest effort can be performed without distress. If we are to determine the course of the disease in these two groups then we must rely upon the symptoms alone, for the signs may be identical. The immediate prognosis—i.e., the present disability—is easily determined by submitting the patient to a simple exercise test. Other factors must be considered in arriving at the ultimate prognosis, and of these the most important is the cause of the symptoms. If symptoms in one arise primarily from myocardial disease, and in another can be ascribed to other causes not primarily cardiac in origin, then we have obtained information of great prognostic value. In the absence of a known cause such as a focal or general infection—chronic appendicitis, dysentery, or pulmonary tuberculosis—it seems to me, with our present knowledge, impossible in early aortic disease to distinguish between symptoms primarily cardiac and symptoms due to other causes. A test of our knowledge of prognosis in early aortic disease will be one based on the after-histories obtained from a large number over a long period. It may then be possible to state definitely that certain symptoms arise primarily from myocardial disease, and indicate the early onset of heart failure; and other symptoms arise from other causes and are of less consequence in prognosing the course of the disease.

RED CROSS AUXILIARY HOSPITALS: ANNUAL REPORT.—The report, which deals primarily with the accounts of the Red Cross War Hospitals at home for the year ended Dec. 31st, 1918, contains also a summary of their operations during the whole period of the war. This summary shows that, excluding private hospitals—i.e., those not in receipt of capitation grants from the War Office—1,260,523 patients were admitted to the auxiliary hospitals, and were treated at an average cost of 3*s*. 8·78*d*. per patient per day for maintenance and 0·83*d*. for administration, a total average cost per day throughout the war of 3*s*. 9·61*d*. Of the total expenditure, £7,760,727 was met by Army and Ministry of Pensions allowances, leaving over £2,500,000 to be found by voluntary public giving. The six leading counties in the matter of patients admitted were: Kent, 114,316; Lancashire (East), 83,619; Hampshire, 63,113; Surrey, 60,324; Cheshire, 58,117; Sussex, 49,344. The soundness of the policy, from a financial standpoint, of running large hospitals is demonstrated by the fact that whereas in hospitals with 50 beds or more the average daily cost of a patient was 3*s*. 11·85*d*., in those with 25 beds or less it was 4*s*. 3·41*d*. The report has been prepared by Mr. Basil E. Mayhew, F.C.A., secretary of the Joint Finance Committee of the Red Cross, and may be obtained from Room 70, 83, Pall Mall, London, S.W. 1, for 3*s*.

THE INCREASE OF ALKALINITY OF THE BLOOD IN SHOCK.

BY BENJAMIN MOORE, D.Sc., F.R.S.

THE report of the Arris and Gale lecture on the Initiation of Wound Shock and its Relation to Surgical Shock, by Dr. E. M. Cowell, D.S.O., in THE LANCET of July 26th, is of high scientific value, but in addition one cannot read it without admiring the calm courage with which these observations were made in the firing line and en route to the casualty clearing stations.

Results of Recent Physiological Work.

It is in no criticising spirit therefore, but because this report will be widely read by surgeons and clinicians who have to undertake the treatment of cases of shock, that I venture to draw attention to quite recent physiological work which demonstrates that there is no enhanced acidity of the blood in shock such as would warrant the use of the term "acidosis," but rather a greatly increased alkalinity which by damage to heart and nerve centres leads to that secondary shock which produces the fatal event. In this aspect of the subject Dr. Cowell is quoting the observations of others, and quotes them quite in an orthodox way, but recent work shows that they are entirely erroneous and misleading, and have warped the treatment of shock into wrong channels.

It is quite true that what has been called the "alkaline reserve" of the blood is reduced in shock often enormously, that the titration value of the alkali of the blood to acids by any of the methods, such as those of Galleotti, Wright, Moore and Wilson, van Slyke, &c., is decreased, so that the condition is described as "acidosis" or "acidæmia." But this same blood is much more alkaline than the normal, and the animal is shocked and dying because its blood and tissue cells are loaded up with alkali.

It is entirely a wrong treatment to administer alkalies. What the organism requires is oxygen, carbon dioxide, and warmth, until oxidation in the tissues begins to approach its normal level. The organism has breathed off in excess its balancing carbonic acid in its attempts to get enough oxygen; it has thereby alkalised all its cells, and this alkalinity, by its action on the state of aggregation of the molecules of the bioplasm, has disturbed the functions of heart and nerve centres. It will be one of the most remarkable records in medical science that for a generation scores of workers in Britain, the continent of Europe, and America went on calmly working on the assumption that pumping off carbonic acid left the blood more acid.

The Cause of Mountain Shock.

One of the pioneers in the subject was Angelo Mosso, professor of physiology in the University of Turin, who carried out many of his researches near the summit of Mont Rosa in the high Alps, nearly 16,000 feet above sea-level, in the Capanna Regina Margherita, provided for him by the Queen of Italy of that time. Mosso and his colleagues showed most clearly that mountain shock and sickness were caused by the denudation of carbon dioxide in the blood, due to excessive breathing to get in enough oxygen. The same factor appears in the shock of aviators at high level, and has recently given rise to investigations by Haldane, Priestley, and others, showing conclusively that alkalinity of the blood is a predominant factor. It has also been shown by Moore and Whitley that a slight increase in alkalinity of a saline perfused through an isolated heart leads to a typical shock, with output reduced to one-fifth of the normal, and stoppage in a few minutes.

Erroneous Conclusions.

But Mosso and Galleotti had not this knowledge, which has only dawned out in the last few months. Galleotti, at Mosso's request, attempted to estimate the alkalinity of the blood where shock was tending to appear at Mont Rosa, 16,000 feet above sea-level; he did it by titrating to phenolphthalein, and found the blood was much more acid. His titrations were correct, but his conclusion profoundly wrong. Similar conclusions have been drawn everywhere, for nearly 20 years since then, but they are all erroneous. They have led to patients being dosed with sodium bicarbonate to relieve shock, and to intravenous injections of acid in animals in the attempt to study shock. In practically every

variety of shock these reduced determinations of the alkali of the blood show that the animal is fighting a stern fight against alkalinity.

"Acidosis" and "Alkalosis."

What is the explanation of this paradox of *alkali diminished, alkalinity increased?* To the physical chemist there is no great difficulty in the proposition; the difficulty comes in explaining it to the biologist, surgeon, and physician. The outlook upon the chemical conditions in shock is all wrong, and this is why the invariably underlying presence of "acidosis," to which at first much attention was given, became later neglected. All cases of serious secondary shock show *so-called* "acidosis," but this acidosis is not "acidosis"; it is "alkalosis." So all the attempts of physiologists to mimic it have been abortive. What, then, is acidosis? As defined by the American physiologists, it must be admitted that in shock there is "acidosis" or reduction of the "alkali reserve." The definition of van Slyke and Cullen is that the serum must be obtained, and then in an atmosphere containing carbon dioxide to the extent of about 5 per cent. of an atmosphere be set in equilibrium. Next, the volume of carbon dioxide in c.cm. per 100 c.cm. of serum which can be evolved from this by addition of strong acid is determined; this gives the "alkali reserve." If the alkali reserve is reduced there is "acidosis"; if the "alkali reserve" is increased there is "alkalosis." The point of difference is that in individuals suffering from shock the blood is not in equilibrium with 5 per cent. of carbon dioxide, but with 2 or 3 per cent. of carbon dioxide. The blood of a shocked person while within the body breathes itself into a high state of alkalinity, and the above method of defining "acidosis" and "alkalosis" is not much better than defining "black" as "white."

When the pressure of free carbonic acid in the blood is decreased then alkalinity rises and kidneys and tissue cells remove alkali from circulation. It is for this reason that the circulating bicarbonate decreases, and so lowered titration figures are obtained, but the blood is more alkaline. A fall in bicarbonate reserve to one-third of normal can be caused by a small fall in pressure of carbon dioxide and accompanying increase in alkalinity.

Primary Shock.

When primary shock occurs from sudden heart failure, from emotional causes, hæmorrhage, pain, or some such stimulus, there is cerebral anæmia and unconsciousness. There may be recovery from this in a few minutes, as in an ordinary faint, but if the condition continues for a longer time, such as 20 to 30 minutes, it is interesting to consider the series of events. The primary factor is that there is a general cessation of metabolic activity at first and a shut-down later to about one-third of the normal rate. Now, if there be a closure down in the tissues to one-third, what must happen if the lungs go on working at their normal rate or even at one-half their normal rate? The answer is that an excess of carbon dioxide over that produced must be removed in the lungs and the blood go alkaline, and this is what occurs in secondary shock.

During the period of fainting both heart and respiration are held in abeyance, the heart perhaps more than the respiration, and there is a venous condition which favours recovery, but later there is a condition in which respiration exceeds circulation and the blood becomes more alkaline and carries shock to the nerve centres and heart.

Excessive Respiration and Shock.

It has been much disputed whether excessive respiration is a necessary antecedent to shock, some have described it, others failed to find it, in wounded soldiers suffering from shock. It is an instance of how long it takes for the obvious to strike us, the balance depends on the relative rate of working of the circulatory and respiratory systems. If as a result of a primary shock the circulation is only working at one-third of its usual speed, and the respiration is going on at usual rate, the amount of carbon dioxide produced will only be one-third of the normal, while elimination proceeds at normal rate. The result must be that the alkalinity of the blood increases, and any such increase leads to heart failure. It is thus seen that hyperpnœa need not necessarily be an antecedent factor to surgical shock, and that in the main the condition depends upon relative rates of circulation and respiration, although other conditions, such as toxic products from wounds and muscle injury and fatigue of nerve centres, undoubtedly play a part.

THE HOT SEASON IN MESOPOTAMIA.[1]

BY F. E. FREMANTLE, F.R.C.P. LOND.,
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THERE is evidently much uncertainty at home as regards the climatic conditions of Mesopotamia. An account, therefore, of the hot season of 1917 at Amara on the Tigris and of the cases diagnosed as suffering from "effects of heat" may be of interest. The military population during the period under review may be taken as 25,000, one-fourth being British, and one-fifth being hospital patients, mostly from other areas.

There were seven general hospitals, three British with 2000 beds, four "Indian" with 3000 beds, and an isolation hospital with 200 beds, besides British and Indian convalescent depôts for 2000 men.

Climatic Data.

As a preface the following facts are given as to the climatic records at the same station in June, September, and December, 1917, and in March, 1918.

	June.	Sept.	Dec.	March.
Temperature (dry bulb).				
Max. average	103°	105°	62°	70°
Highest	110°	117°	76°	80°
Min. average	78°	71°	41°	52°
Lowest	73°	60°	26°	44°
Wet bulb at 4 P.M.				
Average	72°	73°	52°	57°
Highest	79°	82°	59°	64°
Lowest	67°	67°	44°	52°
Humidity at 4 P.M.				
Average	—	—	54	50
Highest	—	—	99	87
Lowest	—	—	22	26
Daily wind movement.				
Average (miles)	442	188	135	171
Highest ,,	730	480	389	406
Rainfall in inches.				
Total	Nil.	Nil.	1·43	1·65
No. of rainy days	,,	,,	7	8
Greatest in one day	,,	,,	0·71	0·90

In fact, the first quarter of the year is the only rainy quarter and is about as rainy as in England; the third quarter is the unpleasantly hot season; the second is cooking up for it; the fourth, like the first—with the exception of only a few rainy days—is delicious.

The freshness of the spring depends partly on the prevailing northerly winds, blowing down from the mountains of Kurdistan or occasionally from the neighbouring Pusht-i-Kuh to the north-east; partly on the floods, which must, by evaporation, help to keep down the temperature in early summer.

The floods depend more on the height of the Tigris than on the local rainfall; and the height of the Tigris depends firstly on rainfall in its upper reaches, and then on the melting of the snows in the mountains.

The river is at its lowest here, from 22 to 23 feet above mean sea-level at Fao, from September to November; and after a temporary rise of a foot in December, rises suddenly in January to 27 or 28 feet, and falls in February to 24 to 25 feet. In mid-March it again rises to its maximum of 27 to 28 feet, and, with or without a remission of a foot, remains constant till the beginning of May. It then begins its slow, steady fall from 27 to 22 feet, spread over four months.

Below the Diala there are no tributaries to the river; but the Hai at Kut, the Chahala and Masharrah at Amara, the several canals and frequent irrigation channels serve as outlets which spread the rising waters over the face of the land, mostly to be absorbed or evaporated, while the remainder enters the Tigris again below the Narrows or, through the Euphrates, joins the Tigris at Qurnah to form the Shatt-al-Arab, running out into the Persian Gulf at Fao. The whole country to windward is therefore moist till harvest-time in April and May. It then dries and the dry heat increases pitilessly day after day.

[1] A paper read before the Amara Clinical Society in May, 1918, and revised in 1919.

Relation of Temperature to Incidence of Cases.

The figures in the temperature chart prepared for this paper were those recorded daily at the Meteorological Station at 8 A.M. each morning for the previous 24 hours and were shown for the day previous to that on which they were reported, so as to correspond in general to the day on which the effects of heat occurred.[2]

This station is in the open, fully exposed to the prevailing N.W. wind blowing right down the upper reach of the Tigris. The air here is noticeably cooler and probably moister than elsewhere; and the figures are probably the lowest in the place. Almost equally trustworthy figures taken in verandahs of hospitals and elsewhere often showed dry-bulb temperatures from 6°–10° higher, even up to 130°, and a trustworthy assistant surgeon at a marching post recorded 140° one day in a 160 lb. tent.

The chart showed dry-bulb maximum varying in these three months from 92° to 121°, with two intense spells, one between 110° and 121° from July 7th to 25th, the other between 108° and 121° from August 16th to Sept. 13th.

The curve showing cases of effects of heat presented two corresponding rises, but more sharply marked and of far shorter duration. In the first spell no more than three cases occurred each day until July 14th, no case occurring on the hottest day—the 10th. In the second spell over three cases a day occurred only between August 19th and Sept. 4th, 14 cases occurring on the day of greatest heat, and 18 on the following day, when the maximum temperature was 11° lower at 110°. Nor did the other two temperature curves correspond to that of the cases of effects of heat, for the minimum dry-bulb temperature reached its highest (88°) on July 17th and 20th, after the case curve had made its chief rise; and the wet bulb at 4 P.M. was highest (83° and 82°) on days when there were 1, 10, and no cases respectively, fewer even in the second instance than on the previous day, when the wet bulb read only 73° and there were 18 cases.

There was, however, a certain correspondence on several occasions between a high minimum—i.e., a hot night—and the number of cases next day; and there was a general correspondence between the heat waves at their height and the number of cases.

The number of cases in June was too rare to attract special notice; and it would appear that it took several days or weeks of heat before the susceptible individuals succumbed to it; and those remaining were more liable to be immediately affected by the second spell of extreme heat towards the end of August.

The failure of the wet bulb to give any useful indication of the danger suggests, as Professor Leonard Hill has pointed out, that the most important preventive factor is the rapidity of cooling, dependent on movement and negative humidity of air and its free play over the surface of the body under the clothes. It was to meet this suggestion that the kata-thermometer has been devised to show rapidity of cooling; and the readings on this instrument should be most carefully recorded and studied in every future hot weather.

Effects of Heat.

The clinical facts, as complete as possible, were taken from the hospital returns received on the special notification form[3] and from a special return of deaths due to effects of heat. Cases were shown under the day on which they first suffered. All cases diagnosed in hospital as "effects of heat" were included, whether otherwise diseased or not. The cases occurred between July 8th and Sept. 11th, with the addition of one case marching up with an echelon and admitted on Sept. 21st.

No. of cases recorded, 353; deaths, 49.
Second attack recorded in 4 cases, of which death occurred in 1.
Third attacks, 0.
Officers, 5; Indians, 16; Arabs and others, 0.

[2] A full chart of daily temperatures and cases of effects of heat, admitted to hospital, was exhibited with this paper but was lost in transmission home. It showed the dry bulb maximum and minimum and, in the absence of a wet bulb maximum thermometer, the wet bulb temperature at 4 P.M. daily throughout July, August, and September, as well as the number of cases each day.

[3] The notification form set out the following heads:—No., rank, and name; regiment; unit to which now attached; camp, billet, aid-post, &c., from which case admitted; if already a patient, previous diagnosis; date and hour of attack; occupation at the time; whether constipated; malarial history—parasites; max. temp. of case; progress since admission; remarks.

Predisposing Causes.

(*a*) Disease:—Malaria: History, 64; B.W. fever, 1; smears B.T., 11; attack, 3.

Other cases actually in hospital at the time had been admitted with—

Sandfly fever	7	Amœbic dysentery	2
Anæmia and debility	7	Enteric group	2
Gastric or intestinal	6	Cardiac	2
Various and N.Y.D.	6	Bronchitis	1
Septic conditions	5	Neuroses	1

(*b*) Constipation: Yes, 122; no, 196.

Time of Commencement of Attack.

00.00–06.00	13	cases, including 4	on 16/7/17
06.00–09.00	21	,, ,, 4	,, 23/8/17
09.00–12.00	56	,, ,, 8	,, 16/7/17
		5	,, 23/8/17
12.00–15.00	42	,, ,, —	—
15.00–18.00	92	,, ,, 7	,, 18/7/17
		9	,, 21/7/17
		7	,, 22/8/17
18.00–24.00	27	,, ,, —	—
Total	251 cases.		

06.00 = 6 A.M.; 18.00 = 6 P.M., &c.

Attack came on gradually in a large proportion of the trivial cases—probably in the great majority of them.

Types of Cases.

Trivial	(temperature below 104°),	177.
Moderate	(,, 104°–106·9°),	83.
Severe	(,, 107° or above or grave symptoms),	78.

Hyperpyrexia (over 105°), out of 353 cases and 49 deaths:—

	No. of cases.	Deaths.		No. of cases.	Deaths.
105°–106°	18	3	109°–110°	14	5
106°–107°	23	2	110°–111°	9	3
107°–108°	26	4	111°	1	—
108°–109°	26	6		117	23

Occupation at time of attack:—

On duty	117	Bathing	1
Off duty	33	Not stated	94
Resting	108		

Occupation of those attacked 15.00–18.00 (3–6 P.M.).—Of 92 for which occupation was recorded 30 were not resting, and were thus occupied:—

Fatigues and grave-digging ...	5	Movement or waiting—	
On guard or police	4	In sun on duty...	3
Parade (2), orderly corporal ...	3	Duty not specified	3
Transport, driving, grooming...	3	Office duty, mess duty	2
Butchery, bakery, cook	3	R.A.M.C. duties	2
		On steamer	1
		Bazaar	1

Aid-posts.

Six aid-posts were established in May, some on the 5th and the rest by the end of that month, at important centres, such as bridgehead and railway station. They were staffed by 23 British privates in charge of a R.A.M.C. corporal, succeeded by a sergeant, an ex-policeman, under the direct supervision of the officer commanding a sanitary section.

These aid-posts were equipped with canvas bath, Persian cooler (a 20-gallon open-mouthed jar of porous earthenware), ice-chest, and one wheel stretcher, with lifter and hood apiece, and were open from May 5th to Sept. 16th. During this season these posts dealt with only 39 cases, since most cases were taken direct to a medical unit or dealt with temporarily by any medical officer in situ until removal could be effected.

Consideration of Preventive Measures.

With regard to the provision for future hot seasons—

(*a*) A large proportion of cases being due to the direct effects of the heat upon hospital patients with weakened constitution, it is essential to protect roofs and walls of hospital wards from the sun as much as possible and to provide electric fans freely. Much is already done in this way, but a final survey, before the season begins, might always reveal details requiring further action.

(*b*) Every case in hospital during the hot season should be examined for malaria and should take quinine if positive.

(*c*) With regard to healthy troops, it should be brought home to every man that constipation is dangerous, and medical officers in charge of units should be specially warned to pay attention to this habit.

(*d*) The occupations of those attacked in the afternoon suggest that a further warning is required with regard to fatigues and movements in the sun. Seasoned officers still frequently consider it manly to defy the heat, both in regard to clothing and duties. The late Sir Victor Horsley, here in Amara, paid for this heresy with his life. Greater folly and cruelty cannot be imagined. It may be generally stated that with a wet-bulb temperature of 80° hard physical work is impossible; at 90° all work is impossible; and at 95° life is impossible.

Consumption of Water: Clothing.

(*e*) The facts that the effect of heat must depend upon the loss of heat from the body, that this depends on evaporation and this again on the amount of water consumed and clothes worn, require further bringing home to all ranks. The consumption of water should be pushed. Men should be encouraged to count the number of half-pints of fluid they drink in the day, and in the hottest weather this should not be less than 16 (a gallon), and may be as much as 50 (three gallons) or more without harm.

(*f*) Similar emphasis and publicity require to be given to the question of clothing during the hot hours. The wearing of coats and belts should not even be optional; it should be forbidden. Puttees retain much heat, and thin stockings should be substituted. Shirts should always be worn outside shorts or trousers when working or marching; this at once doubles the body surface available for loss of heat, and adds greatly to the men's comfort. The adoption of a shirt-tunic to be worn in this way would be ideal for the hot weather. The blouse is already uniform in certain Indian regiments, and is worn in this way by their British officers. Its only faults are that it is too thick, and that it is not open at the neck. Finally, shirts should be worn open at the neck although buttoned, and in case of officers tied to the level of the top button, with stud holes buttoned outwards. This gives a smart appearance and adds vastly to the comfort by allowing a free issue of steamy air from inside the shirt.

Other Suggestions.

(*g*) In varying the official hours of work according to the weather, all ranks should be encouraged to keep early hours in the evening, with lights out at 10 P.M. at latest. Officers and others cannot be expected to be as fresh to stand the heat of the next day with only five or six hours' sleep in the cool of the night; and influence in such matters is contagious. "Early to bed and early to rise" should be a rule.

(*h*) The notification forms should be slightly amended to give in future further and more precise facts on these lines; and if records on similar lines could be kept by the whole Force each year a large body of evidence would be obtained of very great practical importance for military operations—and, indeed, for civil life—in hot climates.

(*i*) Further evidence of value in this connexion would be obtained from readings in various comparable conditions in different huts, tents, and buildings by the kata-thermometer, which shows rapidity of cooling from the human body, and so gives the effective result of humidity and temperature combined. One of these instruments has recently been issued to the meteorological station. They should be under the charge, as here, of a medical officer with special physiological training and an inquiring turn of mind.

Hitherto the value of the different types of hut and tent has been estimated by the general sensation of a few workers and a few patients and by very few and occasional thermometric readings. The importance of the subject warrants a much more extended and systematic inquiry, and I submit that, so long as any medical officer can be spared from hospital-work, an officer with special physiological training should be instructed to make a comprehensive inquiry on these lines throughout the Force, say during the months of June and July.

These suggestions appear to be the logical conclusions of Eastern experience and Western theory. In essential they have already for the most part been officially adopted. It is up to every M.O. in the Force to do his utmost to secure the carrying out of every detail.

A NOTE ON *B. INFLUENZÆ*,

ESPECIALLY AS REGARDS THE QUESTION OF "CARRIERS."

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BETWEEN Oct. 1st, 1918, and March 31st, 1919, 368 cases of influenza were treated in H.M Hospital Ship *Agadir*. These cases came from 110 different ships or establishments at Scapa Base; as a result nearly every type and variety of the disease was seen, from the mildest to the most virulent. Descriptions of the pandemic one read of elsewhere and at first could not agree with often became explicable on admitting a fresh batch of cases.

B. Influenzæ.

As was the case a few years ago with the meningococcus, it is essential to state on what characteristics the organism one calls *B. influenzæ* was identified. Colonies on Matthews's medium [1] were circular, translucent, and brownish by reflected light; isolated examples often exceeded 4 mm. in diameter. Films from these colonies stained well with carbol-fuchsin, showing a Gram-negative bacillus that varied considerably in its morphology; some strains would show quite long filaments. Subcultures (if they grew at all) on to blood-smeared agar reverted to the text-book pin-point colonies, with the usually described characters of Pfeiffer's bacillus. On plain agar there was never any growth. As noted by Fildes and Baker,[2] using other media, stained films from a four- or five-day-old culture on Matthews's medium produced a peculiar granular debris with few distinct morphological bacteria. The differences in shape, size, and staining of bacilli, and the slight variation in the appearance and emulsifying properties of the colonies indicate that the bacteria which possess the above characters have different strains or are a group of organisms comparative to the Gram-negative diplococci.

Culture Media.

A probable reason why Pfeiffer's bacillus has not been invariably found in the late pandemic is the difficulty of being certain of the media and not realising this difficulty. Experiences in this ship with many medias found Matthews's to be the only really satisfactory one of those tried. I do not mean that Matthews's is better than the other medias used by other workers, but that owing to some unknown error in technique or materials satisfactory results were not obtained with other media in this ship. For example, 10 different strains of *B. influenzæ* which grew well on Matthews's media were planted on (1) blood-smeared agar, with the result six grew; (2) boiled blood-water agar—four grew; (3) a bad batch of "K" media [3]—none took; (4) blood boiled in agar—none took; (5) a media consisting of a killed, week-old culture of *Staphylococcus aureus* in blood broth added to agar—in this latter medium all the strains grew, but though in my hands this medium was the most satisfactory after Matthews's, it was not as good as the latter, as the following shows. *B. influenza* was isolated from the naso-pharynx from 10 men using Matthews's medium, whereas with the staphylococcus medium *B. influenza* was only recovered three times from the same 10 cases. In May and June, 1918, I tried to isolate *B. influenzæ* from various patients, using blood-smeared agar, but did not get a single success. I therefore very foolishly stated that I did not believe *B. influenza* was present in these cases. But I am now convinced if I had been using Matthews's medium they would have been found.

Direct Smears of Discharges.

The case against Pfeiffer's bacillus as a causative factor in influenza is often supported by the absence of predominant morphological influenza bacilli in stained smears from the patient's discharges. From 12 positive cases plates were inoculated and at the same time smears of the naso-pharyngeal mucus were stained with polychrome methylene blue and also carbol-fuchsin. In the plates from five cases the colonies of *B. influenzæ* predominated; in the corresponding stained smears numerous morphological *B. influenzæ* were seen in three instances, but in the other two one would not have liked to say they were present without the confirmatory evidence of the plates. On the remaining seven

[1] THE LANCET, July 27th, 1918.
[2] THE LANCET, Nov. 23rd, 1918. [3] Ibid.

plates many colonies of the organism appeared, but in only one of the corresponding films were *B. influenzæ* at all evident. In all the stained smears except three, where organisms of any kind were scarce, numerous other bacteria were present complicating the picture. Hence, because *B. influenzæ* is not obvious in stained films of a patient's discharges it does not follow it will not grow luxuriantly on culture.

Carriers of B. Influenzæ.

There were many cases of influenza continually on board from October to the middle of March, when the number steadily diminished, until at the end of April only two mild cases remained in the ship. During this period the nursing staff of the ship were all examined as regards the presence of *B. influenzæ* in the discharges from the naso-pharynx.

1.	On Dec. 5th–7th	21 men	produced	19	positives,	90 per cent.
2.	,, March 13th–15th	22 ,,	,,	19	,,	87 ,,
3.	,, ,, 27th	20 ,,	,,	10	,,	50 ,,
4.	,, April 27th	22 ,,	,,	6	,,	27 ,,

Sixteen of the men were swabbed on all four occasions, representing a positive result as + and absence of *B. influenzæ* as −. We can classify them thus in the order of the above dates.

4 men	... ...	+	+	+	+	4 men	... ...	+	+	−	−
4 ,,	... ...	+	+	+	−	1 man	... ...	+	−	−	−
1 man	... ...	+	+	−	+	2 men	... ...	−	+	−	−

This shows the infection died out fairly evenly in the nursing staff as the cases of influenza got fewer.

The mercantile crew of a hospital ship has quarters completely separated from the nursing staff, and are, of course, allowed no communication with the patients. A few of the crew were swabbed for comparison with the nursing staff.

10	men on Dec. 6th	gave 6	positive results.
12	,, March 28th	,, 2	,,
10	,, April 27th	,, 1	,,

As regards the incidence of influenza among the ship's company, 40 per cent. of the mercantile crew got infected (average strength 52 men); 62 per cent. of the medical staff had clinical influenza (29 men). The whole 29 of the medical staff were examined at one time or another, and 26 were proved to be "carriers." Of the 3 who were negative, 2 had had influenza and the other was a medical officer who joined when the epidemic was practically over. Of the positives 14 never had clinical influenza previous to the first positive swabbing, though 4 subsequently developed it. Of 12 who had had "flu" 2 got it again later.

By the courtesy of Surgeon-Commander H. S. Burniston, C.M.G., I was allowed to examine 20 seamen and stokers of H.M.S. *Revenge*. Four (20 per cent.) were positive "carriers." The ship's company of *Revenge* averaged about 1200 men. In May, 1918, 22 per cent. had clinical influenza; in October 21 per cent. got the disease (including roughly 3 per cent. of those who had had it in May). Thus about half the ship's company had had influenza. Of the 20 men swabbed 15 had never had clinical influenza, and only 1 of the 4 men who were "carriers" had had it. The latter 4 cases were all from widely separated parts of the ship. It may be guardedly presumed, therefore, that about one-fifth of the crew, or 240 men, were harbouring *B. influenzæ* in the naso-pharynx on Dec. 11th, a month after the last clinical case had occurred on board on Nov. 9th.

Secondary Infections.

Practically every pathogenic organism has been reported as present in the late pandemic. The experience was the same in the *Aqadir*—pneumococci and streptococci are the most obvious secondary infections; but *B. typhosus*, meningococci, diphtheria bacilli, and many unidentified bacteria were seen. This ship may be said to have dealt with about 100 different isolated outbreaks of the disease, each of which often seemed to have its own clinical and bacterial picture. For example, at Scapa in October and November the broncho-pneumonias were nearly all pneumococcic, as proved by cultures from the blood and pleural fluids of the patients, and these cases tended to be delirious and terminated by crisis. By February streptococci had to a great extent replaced the pneumococci. The patients remained clear-headed to the end and the temperature swung considerably before settling down. It was not until the advent of the streptococcus that the typical cyanosis and pure blood expectoration (that one read of down South) became evident at Scapa. To give another example, though 8·3 per cent. of the total cases had epistaxis, in 19 cases from one ship, which were all mild in other respects, 9, or 47 per cent., had epistaxis.

"Filter Passers."

Considerable evidence has been brought forward to prove that a "filter passer" is a causal agent in influenza. The most constant characteristic of this filter passer appears to be that of causing hæmorrhagic lesions in the lungs of experimental animals. Yet in the mild cases of influenza, which form the great majority of all cases, lung signs and even cough are often absent, and clinically hæmorrhage is really not common in influenza as a whole. Altogether the evidence suggests the world-wide spread of an organism, fairly harmless in itself, which prepares the way for any pathogenic organism that happens to be in the environment at the same time. And perhaps this harmless organism (*B. influenza*) especially favours the spread of a filter passer which, though extremely virulent in its presence, cannot gain a footing in the human organism without the help of Pfeiffer's bacillus. Since the above paragraph was first written A. Orticoni and Barbie[4] have reported that *B. influenzæ* and the filtered sputum from an influenza case are harmless to guinea-pigs separately, but together are extremely pathogenic. Should this observation be confirmed, it would go a long way towards proving the double ætiology of influenza as due to a filter passer plus Pfeiffer's bacillus.

During the time influenza was being treated on board, three or four of the ship's company complained of feeling out of sorts; they were not definitely ill, but suffered from headaches and sometimes felt shivery. One case of this sort two or three times had to be put to bed for a day or two. His temperature never rose above normal; his pulse, which was rapid at first, soon settled down to a rate of about 50 beats a minute. *B. influenzæ* was present in his naso-pharynx. This class of man, who never had clinical influenza, may well have been a chronic ambulant type. Many of the post-influenzal "neurasthenics" and "debilities" may possibly be chronic toxæmias due to the influenzal parasite, whether *B. influenzæ* or anything else.

If we grant *B. influenzæ* as a factor in the cause of influenza, "carriers" and missed cases such as "feverish colds" and chronic ambulant cases probably are more dangerous and numerous than the bed case. These, together with the short incubation period, serve to explain the tremendous rate of spread of the disease.

Individual Immunity.

In a ship where 50 per cent. of the ship's company may be infected in a week the rest must be temporarily immune. The crew of a battleship sleep under circumstances where cubic space is very limited and perfect ventilation very difficult. Influenza will spread in a ward with 10 feet between bed centres; with hammocks 2 feet apart, the chances of contact infection by spraying is 125 times as great as in the ward if head-to-foot "slinging" is not insisted on, and 15 times as great where it is properly carried out. (The danger of infection being inversely as the cube of the distance.) From these considerations it can only be individual immunity that protects those who escape infection in the close confinement of a ship. That natural immunity to influenza must vary considerably from time to time in an individual is suggested by the incidence of the disease among the nursing staff, 60 per cent. of whom had influenza. Though in close contact with the cases all the time they did not all get it together, as in the ordinary ship, but the cases were spread more or less evenly over six months. The effect of lowered vitality is well illustrated by the four medical men on board who contracted the disease. They had all been attending cases for one or two months before succumbing themselves. In each instance there was a definite cause of lowered resistance about 48 hours beforehand. In two it was the long journey between Scapa and the south; in one, a temperate man, a larger quantity of alcohol than he was accustomed to; in the last case a long walk after some weeks' confinement in the ship.

Before concluding, I should state the examination of the staff could not be carried to the logical conclusion when all were free from *B. influenzæ*, because the ship's company was relieved before this was possible.

Enough evidence, I think, is collected to make it worth while to investigate how many people in normal times harbour *B. influenzæ* in their naso-pharynx. Even if *B. influenzæ* should be proved a harmless saprophyte, and if carriers of it are rare when there is no epidemic, its almost universal distribution during an epidemic surely requires some elucidating.

[4] La Presse Médicale, May 8th, 1919.

A STUDY OF THE ÆTIOLOGY OF THE "DESERT," SEPTIC, OR VELDT SORE AMONGST EUROPEAN TROOPS:

AND ITS ASSOCIATION WITH FAUCIAL DIPHTHERIA.

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DURING the Egyptian and Palestine campaigns chronic sores, very resistant to local treatment, on uncovered parts, became a great scourge, especially amongst mounted units. I investigated these lesions in a field laboratory, established in connexion with this force in the desert, throughout the whole period and have had access to a very large amount of material.

Most observers are agreed that the "desert" sore is of distinct clinical type, that it is associated with peculiar geographical and climatic conditions, in no way connected with dermal leishmaniasis; and that it must be due to some specific organism. I am of opinion that this organism is the true Klebs-Löffler bacillus.

While my investigations were being undertaken a paper by Lieutenant-Colonel C. J. Martin, C.M.G., D.S.O., F.R.S.,[1] set forth the results of his examination of a limited number of cases amongst the Australian units, E.E.F. He examined hairs extracted from the vicinity of the lesion and noted diphtheroid organisms in this situation. Later he investigated one strain more thoroughly and found that it gave the typical reactions of the Klebs-Löffler bacillus. This particular case differed in no wise from the others and was associated with no obvious constitutional disturbances. He concluded that the diphtheria infection was superimposed upon some pyogenic coccal lesion.

Clinical Characters of the Sore.

Under the term "desert sore" many sores have been loosely classed, which differ widely in their ætiology. The sore I refer to is invariably on exposed parts and mainly on those covered by hairs—i.e., dorsum of hands, forearm, around elbow and knee-joints, on lower part of thigh, and exposed part of legs. (At the commencement of the campaign mounted units, as well as infantry, were commonly clothed in drill shorts.) In a small proportion of cases the lesions occur on the face.

1. *The vesicle.*—The onset is sudden. The first appearance is one of acute inflammation round a hair follicle and in a few hours a vesicle forms full of clear straw-coloured fluid, varying from size of a pea to half an inch or more in diameter. The pain is at first quite out of proportion to size of lesion. It soon bursts and exposes the deeper layers of the cuticle, thus forming a shallow ulcer.

2. *The primary shallow ulcer.*—In the early stages the base is dry, red, and glazed. It is acutely sensitive. In a considerable proportion a thin pearly-grey membrane may form, though its absence does not indicate a non-diphtherial origin. The edges of the surrounding skin become undermined and the ulcer commences to spread peripherally.

3. *The chronic stage of the ulcer.*—The appearance is quite characteristic. It is punched out and circular in outline, with undermined edges and thickened margins. The base of such an ulcer is covered with grey-coloured débris, beneath which one can frequently determine a tough and adherent membrane. Such a deep ulcer may discharge little or no pus.

Methods of Investigation.

Scrapings were taken from the spreading edge of the ulcers by a sterile knife and inoculated directly on to freshly prepared Löffler's serum. In unbroken vesicles the skin was first washed with alcohol; the vesicle was then ruptured and the fluid mopped up from the base, then inoculated on to medium by a sterile swab. The base was also scraped.

The Results of Primary Culture.

One hundred and ninety-seven sores were investigated. The micro-organisms constantly present in the cultures were: (1) staphylococci (*S. albus*), rarely *S. aureus*, or *S. citreus*; (2) diphtheroid bacilli, of two morphological types, i.e.:—

(*a*) A small straight bacillus, staining uniformly with methylene-blue, Gram-positive but decolourising with ease, showing no polar differentiation with Neisser's stain. Usually these small forms were present in moderate number and lay parallel in pairs.

(*b*) Forms morphologically identical with the true Klebs-Löffler bacillus.

I believe that type (*a*) is an immature form of (*b*). Inoculation experiments showed that the small form was equally as toxic as the large and developed into the latter.

One or other of these types was present in 129 out of 197 sores examined—67·5 per cent. I consider this percentage high when the following facts are considered. (1) In the chronic stage of the sore the bacillus is in scanty numbers and attenuated. (2) The frequent dressing of sores with antiseptic lotions. (3) With further cultures the positive findings would probably have been higher. (4) The positive findings compare favourably with results of swab culture of clinical diphtheria of the throat, especially under field conditions.

The following are the statistics of examination of swabs for Klebs-Löffler bacilli in this laboratory for two months in 1917:—Total examinations, 5442. Klebs-Löffler bacilli in throat, 455 (8·3 per cent.); diphtheria carriers, 34 (0·6 per cent.); contacts, 49 (0·9 per cent.).

Association of Sores with Faucial Diphtheria.

During the period of investigation diphtheria both of throat and nose had been prevalent amongst the troops. The epidemic was distinguished by (*a*) the mildness of the average case; (*b*) the difficulty of tracing the source of infection. The question was to decide whether the diphtheroid bacillus in the ulcers was identical with the organism found in the throat.

The evidence I collected at that time may be stated as follows: there is a close correlation between the incidence of faucial diphtheria and the occurrence of the "desert" sore, the causal agent in each case being the true Klebs-Löffler bacillus.

The common occurrence of diphtheritic skin lesions under tropical conditions, as compared to their rarity in temperate climates, may be explained as follows: (*a*) by moistness of skin and activity of sweat glands, soddenness of epithelium providing an opportunity for entrance of bacilli and a suitable medium for their multiplication; (*b*) by the environment of the troops—close contact between man and man, lack of washing facilities, and constant liability to laceration of skin.

The clinical evidence I have collected in favour of this view is interesting and suggestive.

Association of Sores with Constitutional Disturbance and Toxic Neuritis.

The question arose as to why constitutional disturbances and paralysis of the throat or limbs had not been observed. My contention is that cases of paralysis had occurred, and were, occurring, but that either they had been overlooked or attributed to a presumably untreated faucial diphtheria. [Cases were here cited of specific instances of typical diphtheritic paralysis occurring in association with "desert" sores.] Evidence on this score will also be found in a paper written after this work was completed by Major F. M. R. Walshe,[2] in which he described a large number of cases of paralysis following "desert" sores, in one series in 27 per cent.

Medical officers all appear impressed by the amount of debility and weakness, especially of the limbs, which is associated with these ulcers, and quite out of proportion to the size, number, or extent of the lesions. The amount of military inefficiency was considerable, as these debilitated men were the first to fall out during the heavy desert marching. The muscular weakness was probably due to chronic absorption of the toxins in an amount insufficient to cause paralysis.

Confirmatory Bacteriological Tests.

The first experiments on animals were made with glucose-broth cultures of the small diphtheroid organism obtained from a "desert" sore. The organisms were stained uniformly and showed no polar differentiation. 2 c.cm. of the broth culture were then inoculated subcutaneously into a guinea-pig weighing 300 g. The animal died in 48 hours, and from the necrotic tissue at site of injection typical polar staining Klebs-Löffler bacilli were obtained.

Six strains of diphtheroid bacilli isolated from throat lesions and five from "desert" sores were submitted to animal and biochemical tests. All the strains produced acidity in glucose broth after 48 hours' incubation. Both

[1] Brit. Med. Jour., June 9th, 1917.

[2] THE LANCET, 1918, ii., 232.

cultures of the strains in doses of 2 c.cm. were injected subcutaneously into guinea-pigs of approximately the same weight. Eleven control animals were given a similar dose of the organism with the addition of 1 c.cm. of diphtheria antitoxin. [The results were here set out in tabular form. Of the five strains from "desert" sore, the injected animals died in 24 hours, 24 hours, 36 hours, 24 hours, and 30 hours respectively. All the controls lived. Of the six throat strains, five died in 36 hours, 48 hours, 80 hours, 36 hours, and 60 hours respectively; the sixth animal was ill, but recovered. All the control animals lived.]

Post-mortem appearances of injected guinea-pigs.—At the site of injection there was intense congestion and œdema of surrounding tissues; in those animals which survived for more than 24 hours also membrane formation. In all animals an abundant straw-coloured effusion was found in the pleural, pericardial, and abdominal cavities. The suprarenal capsules were swollen, plum-coloured, and intensely congested; section showed hæmorrhagic changes. The spleen, pancreas, liver, and other viscera appeared normal. Klebs-Löffler bacilli were recovered on culture in every case from the site of injection—that is, from the necrotic tissue. Similar cultures from the heart's blood proved sterile, showing death from toxæmia.

All these typical post-mortem appearances agreed with the classical description of the action of the Klebs-Löffler bacillus upon these animals.

The tendency to the production of serous effusions by diphtheria toxins would explain the vesical formation of the primary cutaneous lesion and the suddenness of the onset of the "desert" sore.

A striking experiment was performed on quails, a bird apparently very susceptible to the diphtheria bacillus. Birds were selected after two months in captivity and in very good condition. 2 c.cm. of a broth culture of a typical diphtheria bacillus isolated from a "desert" sore were injected into the pectoral muscles of one bird; a second was given a similar dose mixed with 1 c.cm. of diphtheria antitoxin. The first bird died in 16 hours; the second exhibited no symptoms. Considerable serous effusion found at site of inoculation, from which the bacillus was recovered; heart's blood was sterile.

I conclude that the diphtheroid organism isolated from "desert" sores can be none other than the true Klebs-Löffler bacillus. The question may be raised why are not the cutaneous lesions more frequently associated with membrane formation and constitutional disturbances. The answer is that only a very small percentage of positive throat cases presented lesions or constitutional disturbances such as are commonly associated with clinical faucial diphtheria. Out of a series of 221 positive cases I examined clinically only 10·8 per cent. presented such symptoms.

The Results of Antitoxin Treatment.

Diphtheria antitoxin proved an absolute specific for the chronic "desert" sore of the type described. This will be supported by the experience of a large number of regimental medical officers, medical officers in field ambulances and casualty clearing stations. The sores which have resisted treatment for weeks and months heal in a few days with an average dose of 4000 units. Critics have suggested that the normal horse serum would have the same effect. Anti-dysenteric serum (horse serum) had a partial protective influence, the animals recovered, but suffered considerably nevertheless. The natural deduction is that horse serum normally contains a certain amount of antitoxin to the diphtheria bacillus.

Prophylaxis: General and Personal.

General prophylaxis.—I am convinced that the human carrier cannot account for the prevalence of diphtheria during this campaign. The bacillus is capable of a saprophytic existence. I suggest that one medium is horse manure. From horse manure I isolated a diphtheroid bacillus morphologically identical with the Klebs-Löffler, but non-pathogenic to guinea-pigs. Since the troops have advanced into the cultivated portions of Palestine the incidence of "desert" sores has fallen to a negligible quantity. These facts, with the greater incidence of "desert" sores amongst mounted units suggest an intimate connexion between horse manure and the causation of throat diphtheria and "desert" sores. I would suggest further investigation on these lines.

Personal prophylaxis.—The measures suggested are the protection of exposed parts of the body, and especially the knees, from injury; the wearing of "shorts" by mounted units is unsuitable. The use of antiseptic lotions to the arms and knees of the men, and especially to any abraded surfaces, is to be advocated wherever possible, as well as protection of sores with a dressing, and the avoidance of too intimate a contact between man and man.

Conclusions.

1. That this "desert" or septic sore is a distinct clinical entity and has a distinct geographical distribution.
2. That the ætiological factor is the Klebs-Löffler bacillus, which is responsible for the specific characters of the lesion.
3. That this organism possesses a low virulence, and therefore only produces constitutional disturbances in specially susceptible individuals.
4. That under favourable conditions these sores may be responsible for outbreaks of faucial diphtheria.

Against these conclusions certain objections raised are:—

1. That the diphtheria bacillus is but a secondary infection superimposed upon some pyogenic lesion. The frequency with which I have isolated the Klebs-Löffler bacillus from the primary lesion with appropriate technique shows that it is a primary infection.
2. The inability of pathologists at the base hospitals to find Klebs-Löffler bacilli in the majority of these sores. The more chronic the sore, the greater the number of pyogenic organisms present, the more difficult it is to isolate the Klebs-Löffler bacillus. Also in base hospitals a large proportion of these cases were deep-seated pyogenic infections with which I was not dealing. In this way I explain the discrepancy between my results and those published by Warren Crowe.[3]
3. The question of the curative action of antidiphtheritic serum I have dealt with.

I desire to place on record my indebtedness to Major A. R. Ferguson, R.A.M.C., for enabling me to carry out part of this work in his laboratory. My thanks are also due to Captains P. H. Bahr, T. J. Mackie, R.A.M.C. (T.F.), F. Standish, R.A.M.C. (T.F.), and J. G. Willmore, R.A.M.C. I wish also to thank Captains Higgins, R.A.M.C., and C. Newton-Davis, I.M.S., for providing me with clinical histories of their cases.

COMPULSORY INOCULATION AGAINST SPANISH INFLUENZA.

BY FRANCIS TEMPLE GREY,
SURGEON-LIEUTENANT, ROYAL NAVY; O.C. SAMOA RELIEF EXPEDITION, 1918.

MY experience in the South Sea Islands so impressed me with the value of antipneumostreptococcal inoculation as a prophylactic against Spanish influenza that on my return in February, 1919, to Australia (where the scourge had already got a hold in Melbourne, but had so far been kept out of Sydney) I urged the importance of making it compulsory. But outside the Service nothing happened.

The following preliminary communication submitted early in March to a semi-scientific periodical was published six weeks afterwards.

"The vaccine prepared by the Commonwealth Serum Laboratories has in my hands achieved results which are nothing short of miraculous. As a result of my experience, I urge compulsory inoculation on the first signs of the appearance of epidemic influenza in any community as the one efficient means of tackling the scourge; inoculation to be repeated every month or six weeks. I claim that this measure will (1) decrease enormously the incidence of the disease; (2) mitigate its severity; (3) reduce the mortality to a low figure.

The following evidence in support of my recommendation is, to say the least of it, impressive.

(1) The entire ship's company of the man-o'-war which took my expedition to the Islands were inoculated. Communication with the shore at the various ports was, as far as possible, avoided, but this ideal was not entirely attained. Not one case developed.

(2) Every member of my expedition was inoculated at least four times in three months. Not a single case developed, although the risk of infection was no small one, when it is remembered that in Samoa alone one-fifth of the entire population was wiped out by the scourge. Two officers had an illness of four to five days not as severe as the so-called influenza of normal times.

[3] THE LANCET, 1918, ii., 667.

(3) An interesting experiment to test the efficacy of the vaccine was provided by the Governor of American Samoa, who sent, against the wishes of British Samoa, 40 natives from Pago Pago (a clean port) to Apia during the progress of the epidemic. These were isolated, inoculated, and not released until judged to be in a positive phase. Not one contracted the disease, and the Secretary of Native Affairs, who knew their names and villages, reported all clear after a lapse of one month.

(4) Ship's company and passengers of the steamer which brought the expedition from Suva to Sydney were inoculated without exception. We anchored in quarantine in Sydney, and on the second day a case was taken ashore. We remained on board, quarantined another week. Although the ship was very overcrowded not another case developed.

(5) The naval depôt at Williamstown contains a floating population of about 500, half of whom live on shore, and the rest, of course, have a fair amount of shore leave. All hands have been inoculated twice in the last three months. There have been only 15 cases, all mild except two, and no deaths.

The severe reaction in some cases to the lymph during the small-pox epidemic of 1913 on an unvaccinated adult community has done much harm to what must perforce be called the 'cause' of vaccination in Australia, seeing that the public has been taught nowadays that it is entitled to an opinion on subjects it knows nothing about. It may reassure these opinionated objectors to know that in this case, at any rate, there is little or no reaction. I myself have seen only one reaction in all my inoculations.

Conscientious objectors, if the legislature has not the courage to compel inoculation, should be isolated from the rest of the community, it being pointed out to them that we object not so much to their committing suicide as to their carrying the disease unmitigated to those who are not tired of life."

In the middle of March, a fortnight after my first communication was submitted, an epidemic broke out in the ship referred to in paragraph 1, and by the end of the month there were about 100 cases with no deaths. Inoculations (end November and end December) appear, therefore, to have given immunity up to the middle of March, and, when the disease broke through, to have rendered it non-fatal. To deny mitigation by inoculation in this case is to say that the disease was not Spanish influenza (which has a high mortality), and, therefore, that the immunity was absolute.

Soon after my first communication was submitted an influenzoid epidemic broke out in the naval depôt at Williamstown, and within a fortnight we had 100 cases (characterised by high infectivity, extraordinary mildness, and an average age-incidence of 18½). I was inclined to regard this as a separate clinical entity, but if it were Spanish influenza then the case for inoculation is rendered stronger than ever.

From the beginning of the year to date (June 20th, 1919) 2875 ratings have been victualled at the depôt; there have been 345 cases of influenza, 5 with pneumonic signs, and no deaths.

The Constituents of the Vaccine.

A full dose of the vaccine used by me contains 125 millions of *Micrococcus catarrhalis*, 50 millions each pneumococci, streptococci, and of a Gram-positive diplococcus. My experience shows Pfeiffer's bacillus to be unnecessary as a constituent of a vaccine directed against this epidemic, and, in view also of the risk of a negative phase, it is clearly unwise to use it in any community where the epidemic is already well under way.

If Spanish influenza be caused by a streptococcus for which the way has been prepared by, say, the bacillus of Pfeiffer or a filter passer, and especially if this last represent a stage in the development of the streptococcus, an anti-streptococcal vaccine should be, and in my experience has been, competent to protect.

On May 14th half the depôt were given a pure anti-streptococcal vaccine and the other half were given the vaccine already mentioned, with a resulting difference in incidence to date of practically nil.

Immunity begins to peter out after the fifth week. I give a full dose (50 millions each pneumococci and streptococci) every five or six weeks, and never get more than the mildest reaction. I do not inoculate children or the old unless requested, as these appear to have relative immunity. The disadvantage, from the public point of view, of a preliminary dose, apart from the fact that it is unnecessary, is that the public are apt to think that the preliminary dose is all that is required, and for this and other reasons (if reasons they can be called) do not come up again, and their non-immunity is charged against inoculation. The theoretical objection to a full dose without preliminary—viz., that in stray cases a focus of chronic suppuration may be lit up or that a nephritic may stand it badly—has no weight against the foregoing consideration, and is in any case the concern of the individual vaccinator, who, if ignorant, will damage this as he has damaged other causes.

I have to acknowledge with grateful thanks the help and encouragement I have received from Surgeon-Captain Eames, R.N., Director of Naval Medical Services (Australia); his predecessor, Surgeon-Commander Bean, R.N.; Surgeon-Lieutenant Commander Ramsay Smith, R.A.N., in medical charge of the naval depôt, Williamstown; and especially from Dr. Penfold, director of the Commonwealth Serum Laboratories.

A CASE OF "606" DERMATITIS TREATED WITH INTRAMINE,

WITH SUBSEQUENT MULTIPLE SUBCUTANEOUS TUMOUR FORMATION.

BY A. R. FRASER, M.D. ABERD.

THE following case of exfoliative dermatitis occurred in my wards at the Scottish Command Central Venereal Hospital, Robroyston.

Account of Case.

The patient was a recruit of six weeks' service, attached to a labour company, aged 41, a healthy man, but undersized and slightly and slimly built, with a large double inguinal hernia. His medical category was B 2. He had no history of previous venereal disease. He was admitted to hospital with a large spirochætal chancre of three weeks' duration. This was a diamond-shaped erosion, with a moist, greyish, finely granular surface. Very definite induration could be made out between finger and thumb. It was somewhat larger in size than a sixpenny-piece, and was situated on the upper external aspect of prepuce. There was a marked inguinal, axillary, epitrochlear, and posterior cervical adenitis. A scattered, diffuse, irregular, fairly symmetrical faint macular rash was present over the trunk and flexor aspects of limbs, being, however, most marked below the scapular angles. The fauces were somewhat injected, but there was no other mucous membrane lesion. Lungs, heart, and the central nervous system showed nil abnormal. Spirochæta pallida was found present in the sore on the day of admission, and two days later his Wassermann reaction gave a strongly positive result (++).

He was then put on a course of neo-kharsivan intravenously, and mercurial cream (metallic mercury) intramuscularly. On the day of his third injection the sore had completely healed, having meanwhile been locally treated with calomel ointment, 30 per cent. Seven days later the rash had disappeared and except for a slight adenitis the patient showed no active signs of lues. His course consisted of 3·90 g. neo-kharsivan intravenously, and gr. 7 metallic mercury intramuscularly, extending over a period of 56 days. This he underwent without incident, on no one occasion showing the slightest reaction. His urine was free from albumin throughout the course. On the fifty-eighth day his Wassermann reaction gave a complete negative result. He was forthwith discharged from hospital.

On the morning of his discharge, having drawn his kit and prepared for the journey to his depôt, he complained to me of having a headache and generally feeling off colour. On examination it was found that a scarlatinal eruption had appeared over both forearms on the flexor aspect. His temperature was 102° F. He was readmitted to the ward and put to bed, and adrenalin 1 : 1000 administered in 10 m. doses every four hours. This occurred on the sixtieth day. Calomel gr. 5 followed by a saline was given. The following day the rash had spread over the face and neck, legs and trunk. It was well marked on the forehead. At this stage the rash might have passed for scarlet fever, but later blebs and pustules developed, with scaling and crusting on their rupture. There was very considerable exudation into the skin, most marked on the face and head. The cheeks and eyelids became very swollen and puffy, the eyes practically closed. The temperature remained at 102°. The patient was put on ichthyol m. 5 in cachets, three being given daily. The application of calamine cream and bran bathing failed to diminish appreciably the intense skin irritation. By the fourth day the rash had become confluent, particularly over the thighs and abdomen. The tongue was dry and very heavily coated; it was difficult to induce the

patient to take even a little milk, and he was losing ground rapidly from loss of sleep. He complained most of pain in the eyes, and a dry, congested, choking feeling in his throat. Swallowing was obviously a trying and painful procedure. Ichthyol was continued until the eighth day, but no improvement could be seen from its employment. It was discontinued. On this day 2·50 c.cm. intramine was given intramuscularly. The following day the temperature dropped to 99·4°, the patient expressed himself as feeling better, and exfoliation commenced over the face and forehead. There was no pain at the site of injection, and no local reaction. Exfoliation continued, and four days later a second injection of 2·50 c.cm. intramine was given, again causing no local pain. The skin exudation had now gradually subsided and exfoliation had continued apace. A third and fourth injection of intramine in similar doses followed at four-day intervals, and the patient steadily improved. The skin had now become of an intensely reddish-brown tint and the itching was very severe. This gradually subsided and the skin became very thin and atrophic and of a deeply pigmented dull coppery hue. The patient's general condition steadily improved, his voice was stronger, he became interested in his surrounding, his appetite improved, and he became much less depressed.

On the twenty-seventh day a very large non-inflamed swelling appeared suddenly at the lower end of the sternum in much the same manner as a pyæmic abscess. By evening it had reached the size of a cricket ball. There was no surrounding inflammation and no "pointing." The following day similar smaller swellings had appeared over the external condyle of the left femur, the upper third of the left fibula, over the symphysis pubis, the upper third posterior aspect right thigh, the external surface upper third of the right tibia, the left epigastrium, the back of the left elbow, and on the sacrum. They varied in size from a walnut to a large plum. These were fluctuating, non-inflamed, painful swellings. They seemed peculiarly tender, ordinary gentle palpation being resented by the patient. The contents proved to be a thick gelatinous, slightly opalescent, stringy mucinoid substance which was very difficult to draw into a syringe, even through a needle of large lumen. There was no pus. Microscopically it showed no pus cells and no organisms present. An occasional *epithelium* cell could be seen. No organism could be cultured. Although the patient's general condition improved, these swellings continued to appear, until by the fifty-first day they had reached a total of 72. In every case the swelling increased in size, remained for two or three days, eventually burst, and healed over in 24 hours without a scar. The patient steadily lost weight, but otherwise maintained his general condition. He did not look ill, and his voice was that of a strong, healthy man.

The tumour formation continued without abatement, and owing to lack of nursing facilities he was now transferred to a general hospital. There he lost ground insidiously, and the case terminated fatally a few months later. The post-mortem findings coincided with that condition described as acute yellow atrophy.

Conclusions.

It is extremely difficult to suggest any definite cause for this extraordinary process of tumour formation. Pyæmic abscesses containing definite pus occur in severe cases of "606" dermatitis. Here, however, the absence of pus and the sterility of the tumour contents, together with the non-inflammatory nature of the swelling, makes it extremely difficult to draw any analogy. The process seemed to be of the nature of a subcutaneous myxomatous degeneration. In all probability salvarsan was the exciting cause. There seems nothing to suggest that the intramine was in any way responsible for the condition. On the contrary, I think this drug was beneficial, and essentially non-toxic.

The immediate improvement following the administration of intramine was very marked. The fall of temperature, the early exfoliation and the appreciable improvement in the general condition coincided with the first and second intramine injections. In spite of the patient's very poor cachectic condition its intramuscular administration caused no pain or discomfort whatever.

Although no such condition has been described, it seems a possible suggestion that his syphilis was in itself the exciting cause. One feels, however, that this is unlikely, since his disease had reached a "latent" condition. It is extremely probable that in both "606" jaundice and dermatitis the benzene or amino group, and not the arsenic, is the causative agent, and as this condition has never been observed as caused by arsenic apart from this chemical combination, the amino radical may also in this case have been the causative agent.

Aberdeen.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THREE UNUSUAL CASES OF INTESTINAL OBSTRUCTION.

BY W. H. C. ROMANIS, M.B., M.C. CANTAB., F.R.C.S. ENG.,

SURGEON TO OUT-PATIENTS, ST. THOMAS'S HOSPITAL; SURGEON, CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST.

INTESTINAL obstruction may justly be regarded as one of the more interesting forms of acute abdominal disease, both from the point of view of the diagnosis of its cause and no less from the consideration of the various problems involved in its surgical treatment. The three cases recorded below are not only instances of obstructions from rare causes, but one at least presented a complex problem in surgical treatment.

CASE 1.—A woman, aged 45, after some weeks of ill-health and constipation, was suddenly seized with acute abdominal pain and vomiting, which rapidly became dark and evil-smelling. When seen four days later the pain and vomiting were unaltered, the abdomen was very distended, and visible coils of bowel were present, especially in the right iliac fossa, where a large, resonant, rounded mass was present. The bowels had not been opened for four days, and her pulse and general condition were poor. Laparotomy was performed, and the first organ that presented itself was the cæcum, distended to a diameter of 7 inches and completely green and gangrenous, the gangrene extending up the colon to the hepatic flexure. All the intestines were very distended, especially the large bowel, and low down in the pelvic colon was a small movable ring carcinoma causing complete obstruction; the cæcum was in no way twisted, and had evidently become gangrenous from the tension of its walls caused by its distended condition. The gangrenous cæcum and ascending colon were removed, but the patient's condition was not sufficiently good to permit of the growth (which was operable) being also resected, while the distended and friable condition of the bowel rendered any attempt at an intestinal anastomosis hazardous. Paul's tubes were therefore tied into the lower end of the ileum and the upper end of the ascending colon and the abdomen closed. The patient made a rapid and uninterrupted recovery, was not troubled with soreness and digestion of the skin round the enterostomy wound, and gained weight. Some weeks later the growth was resected and a double anastomosis done, the two ends of the pelvic colon being united by end-to-end suture and the divided end of the ileum implanted in the side of the transverse colon.

CASE 2.—A woman, aged 62, was admitted with a history of no previous ill-health, but of five days intense pain and vomiting of sudden onset. The bowels had not been opened and the vomiting was incessant, and consisted of black and foul-smelling matter. The abdomen was very little distended, but visible intestinal coils were present, and in the left iliac fossa a round and very hard movable mass the size of a large chestnut could be felt. It was thought that this was probably a ring carcinoma causing the obstruction. The abdomen was opened and a large gall-stone was found firmly impacted in the ileum 2 feet above the ileo-cæcal valve. The bowel above was extremely distended, and the condition of its wall at the point where the stone was and for a foot or two above was very bad, and gangrene appeared to be imminent. The stone was extracted through an incision in the bowel wall, the bowel resutured and covered with an omental graft, the patient recovering rapidly. Examination at the time when the abdomen was opened showed that no further gall-stones were present, but there were many old adhesions round the gall-bladder and duodenum, though on inquiry afterwards the patient stated that she had never had any pain or symptoms that could in any way have been caused by the presence of gall-stones.

From these two cases it appears that distension of the bowel alone without any direct strangulation of its blood-supply can, if allowed to continue long enough, go beyond the stages of congestion, œdema, and infiltration of the bowel wall, and lead to actual gangrene of the whole thickness of the intestine. Perforation of stercoral ulcers in the distended colon above an obstruction is by no means uncommon, but distension-gangrene of the whole cæcum is a considerable rarity.

CASE 3.—A soldier, aged 20, was admitted with a history that 14 hours previously he ran a seven mile race, and for 12 hours had had acute abdominal agony of sudden onset, with intense vomiting. His bowels had been well opened, and on examination his pulse was 70, his abdomen retracted, board-like and dull in the flanks. Laparotomy was performed at once and the abdomen was found full of a blood-stained purple fluid, a large number of black gangrenous coils of ileum, in places already turning green, presenting themselves. It was found that many feet of ileum had passed through a small hole in the lower part of the mesentery, and that not only was the portion of bowel that had passed through the mesentery gangrenous, but the pressure had produced gangrene of that part of the ileum in whose mesentery the aperture was, the gangrenous portion extending down to within 2 inches of the cæcum. The whole gangrenous portion was resected almost down to the cæcum, the ends closed, and a lateral union made with two layers of silk sutures between the lower end of the ileum and the side of the cæcum. On subsequent examination the resected portion was found to consist of 14 feet of ileum, all black and gangrenous, but the patient was too bad on the table for any investigation as to the amount of ileum remaining. He made an uninterrupted recovery, and after the first week rapidly put on weight until in four weeks he was heavier than before the operation. At first there were six or seven loose motions daily, but when seen four months after the resection, he was having two soft motions daily and doing his full day's work with ease.

Other Recorded Cases.

There have been many and prolonged controversies as to the amount of ileum necessary for the maintenance of normal nutrition. Probably the longest resection recorded is a case of Brenner's referred to in Moynihan's "Abdominal Operations," in which 17½ feet were removed, the woman dying 2½ years later of marasmus. Several other cases of resection of more than 14 feet appear to have lived without any signs of malnutrition, whereas other cases in which only 8 or 9 feet have been removed, have suffered from and even died of malnutrition, and it appears that individual peculiarities exist which render any dogmatic statement quite impossible.

VESICAL PAPILLOMA SIMULATING VESICAL TUBERCULOSIS.

BY ROLF CREASY, M.R.C.S., L.R.C.P. LOND.

I VENTURE to publish the notes of this case as they may prove both interesting and instructive.

Previous history.—T. H., 46 years. Primary hæmaturia in December, 1917, frequency of micturition following soon after. Discharged from the Army in March, 1918, for "tuberculosis of testicles and bladder." Attended as an out-patient for 17 months (April, 1918, to August, 1919) at one of our largest London hospitals under treatment for tuberculosis of bladder and testicles. Between May and July he attended at the R.C.S. examinations three times, being shown as a case for diagnosis (in the light of subsequent events one wonders if any luckless candidate was ploughed for not diagnosing T.B. of bladder). Was examined four times to January, 1919, by pensions board and diagnosis confirmed.

Condition on admission.—The patient was admitted in August to All Saints' Hospital for Genito-Urinary Diseases, when his condition was as follows: Testicles wasted; nodules felt in both epididymes and thickening of both cords. Prostate normal; vesicles rather thickened. Cystoscopic examination revealed a cherry-sized, innocent papilloma springing from the bladder wall just above the right ureteric orifice. Bladder walls quite healthy, showing no signs of tubercle. Both ureteric orifices normal, with good efflux. Trigone normal. A test dose of old tuberculin, 0·0005 c.cm., gave marked positive reaction, local and general.

Points of Interest.

The points of interest in this case are:—

1. The improper assumption of tuberculous bladder because of the tubercle elsewhere. It is surely a grave reflection on the study of urology in our London hospitals that no cystoscopic examination was made in the case of this man complaining for over two years of hæmaturia and frequency of micturition. The case emphasises also the necessity for early cystoscopic examination in all cases of hæmaturia. The cod-liver and malt prescribed in hospital for his condition naturally benefited in no way the papilloma in his bladder.

2. The prompt treatment of his papilloma by Mr. Canny Ryall by diathermy fulguration.

3. The positive reaction to the tuberculin test (which test should without doubt be applied to all cases of suspected tuberculosis of the genito-urinary system), enabling the treatment by tuberculin injections to be at once started.

In regard to the last point, with the assistance of Mr. Ryall and Dr. Camac Wilkinson I am carrying out a series of some 20 cases of genito-urinary tuberculosis treated by tuberculin injections, the result of which I hope to publish in due course.

Grafton-street, W.

A CASE OF BACILLARY DYSENTERY

IN WHICH FLEXNER-Y WAS RECOVERED FROM THE BLOOD STREAM DURING LIFE.

BY J. S. K. BOYD, M.B., CH.B. GLASG.,

CAPTAIN, R.A.M.C. (T.C.); FORMERLY OFFICER IN CHARGE, BRANCH NO. —, MOB. BACT. LAB., B.S.F.

IT is a general experience that dysentery bacilli have been rarely recovered from the blood during life. Glynn and his collaborators[1] (1917) have collected from the literature 15 cases, viz.: *B. dysent.* Shiga, 2; *B. dysent.* Flexner, 1; inagglutinable *B. dysent.* Flexner, 1; and *B. dysent.* Y, 11. In 12 other cases the bacilli were found in the blood after death—viz., Shiga, 6 times; Flexner, 4; Y, 2. Maer[2] (1918) has since recorded the presence of *B. dysent.* Shiga in the blood of a soldier in the East, who subsequently died. Caussade and Marbais[3] (1919) described a remarkable case of acute dysentery with pyrexia, which was fatal in a week. The stools were examined three times, with negative results, for amœbæ and pathogenic bacteria. Typical Shiga bacilli, however, were isolated from the blood post mortem. The patient's blood also gave positive agglutination to Shiga 1–100. The large intestine was inflamed and the epithelium necrosed, but there was no definite ulceration. L. Rosenthal[4] (1903) isolated agglutinable Shiga bacilli from the heart blood and spleen of a male, aged 20, who died after four days' acute dysentery; there was typical dysenteric thickening of the large intestine and the mesenteric glands, which were one and a half times the normal size and contained much blood.

While serving with the Salonika Force in the summer of 1917 I encountered another case, the seventeenth; here Flexner-Y was the organism.

L.-Cpl. K. was admitted to C.C.S. complaining that four days previously he "turned ill with sickness, vomiting, and diarrhœa"; the latter symptoms progressively became worse. On admission his bowels were moving "every few minutes" and he was passing small stools of blood and mucus. He had severe general abdominal pain. He was flushed, but had no typhoid facies. The tongue was dry and heavily furred, the abdomen sunken. No rash was observed, and the spleen was not palpable. The temperature was 100° F. and pulse 98. The patient had not been inoculated against dysentery.

Stools.—These presented macroscopically and microscopically the typical appearances of bacillary dysentery—i.e., they were small stools consisting altogether of glairy mucus streaked with blood and contained many leucocytes and a moderate number of red blood corpuscles, desquamated and degenerating epithelial cells. Plated on MacConkey's medium an almost pure culture of an organism with the following cultural characters grew. Glucose—acid, no gas; mannite—acid, no gas; maltose, lactose, and cane—unchanged. The organism was agglutinated to the full titre, 1–1500, by Lister Institute Flexner-Y antiserum.

Hæmoculture was performed in the usual way on the day of admission, 2 per cent. bile-salts in distilled water being used. In 36 hours an organism was recovered from this which gave the same cultural and agglutinative characteristics as that isolated from the stool.

Before the special interest of the case was recognised the patient had recovered sufficiently to be evacuated to the base, and was consequently lost sight of.

It will be noted that the organism is of the "Y" type, and that the symptoms show no unusual variation from the ordinary acute dysentery.

I have examined about 12 other apparently similar cases of acute bacillary dysentery in about the same stage of the disease with the same hæmoculture technique, but the results were negative.

[1] Glynn, E. E., &c.: Report upon 2360 Enteritis "Convalescents," Medical Research Committee, Report No. V., Special Report Series No. 7. [2] Maer: Brit. Med. Jour., 1918, vol. i., p. 84.
[3] Caussade, G., and Marbais, S.: Bull. Soc. Med. des Hôpitaux de Paris, 1919, No. 7-8, p. 145.
[4] Rosenthal, L.: Deutsch. Med. Woch., 1903, No. 6, p. 98.

Reviews and Notices of Books.

Human Infection Carriers. By CHARLES E. SIMON, B.A., M.D., Professor of Clinical Pathology in the University of Maryland School of Medicine. Philadelphia and New York: Lea and Febiger. Pp. 250.

THE problem of the human carrier of bacterial infection is assuming ever greater importance. Professor Simon regards all such individuals as a menace to society. He "wants to make your flesh creep." He refers to "the *hidden* foe," and estimates, on figures of doubtful validity, that there must have been at least 2679 carriers of the *B. diphtheriæ* in New York in 1915, and that the same city may be assumed to harbour some 25 000 typhoid carriers; though he is led to express some surprise that, in such circumstances, typhoid fever is not much more prevalent than is actually the case. Viewed in this light, as the case for the prosecution, the book makes instructive reading, though it is difficult to withhold some measure of sympathy from the carrier in the dock, and one is left with a feeling that a conviction on all counts would hardly be obtained on the evidence submitted. As a critical survey of the carrier problem the work cannot compare with that of Ledingham and Arkwright published seven years ago, to which, strangely enough, Professor Simon does not once refer. Much recent work in connexion with poliomyelitis, cerebro-spinal fever, and pneumococcal and streptococcal infections is included in the chapters dealing with these subjects. Many of the more important facts which have recently come to light in connexion with the epidemiology of meningococcal infections are, however, omitted or passed lightly over. Certain errors and omissions are probably the result of haste in preparation and will be corrected in a subsequent edition. The most glaring examples occur in the table of fermentation reactions on p. 94.

A strong plea is put forward for the control of convalescents from infectious diseases, based on bacteriological findings, and for the rigid quarantine of all detected carriers, whether convalescent, contact, or non-contact. Where this is obviously impossible the strict limitation of their activities is suggested as the most desirable alternative. Several large assumptions are made: that practically all carriers derive the organisms which they harbour directly or through a series of contacts from a case of the disease in question; that the efficient control of the patient would largely prevent the occurrence of carriers; that our technique is sufficiently accurate to enable us to detect such individuals by a practicable routine; and that a thorough campaign carried out along these lines would eventually eliminate the carriers and hence the diseases which they spread. Almost all these basic assumptions may be, and have been, doubted. In the case of cerebro-spinal fever the rise in the carrier-rate has clearly been shown to precede the epidemic. Once this has started many carriers will be produced by direct or indirect contact with actual cases; yet it may be that the actual case is often the final product of a process in which the passive carrier and the atypical case mark successive stages. The numerous statistical results, which have been obtained as regards repeated examinations of individual carriers over long periods, do not tend to strengthen our confidence in our ability to eliminate these unfortunate persons by practicable measures. The widespread dissemination of the meningococcus among the healthy population, so clearly brought out by the work of Eastwood, Griffith, and others in this country, is hardly compatible with the belief that any scheme of quarantine will avail to rid us of carriers of this organism, and observers of repute have expressed a definite opinion that efforts along these lines are useless in this disease. The book is marred in some respects by being written too exclusively from the point of view of the clinical pathologist, and certain fundamental facts of epidemiology are misstated or ignored. Twice, at least, is the suggestion made that epidemics started by carriers may spread until suitable soil is no longer available. In the sense that an epidemic ceases because all susceptibles have been attacked, this view has been shown by numerous authorities to be untenable. The mischievous activity of certain types of carriers has been demonstrated to the satisfaction of almost all those who have studied the question, and Professor Simon presents us with several new histories illustrating this, including the latest chapters in the life of the famous "Typhoid Mary."

Among the most interesting features of this work is the appended summary of the State laws and regulations pertaining to infection carriers; and it would be hard to find a better text from which to preach the urgency of further inquiry into the whole matter. Most of the laws and regulations are new. While 16 States, at least, have given no definite rulings on this question, one hopefully includes scarlet fever in a list of diseases in which carriers shall be liable to special control. Illinois strikes a practical note in prohibiting typhoid convalescents from engaging in the preparation or handling of foodstuffs or milk until the excreta are certified to be free from bacilli, and in imposing a fine of not more than $200 or imprisonment in the county gaol for not more than six months, or both, as a penalty for each offence. The effort to deal with a problem of such real importance along legislative and administrative lines reflects great credit on the activity of the health authorities of the United States, and is full of interest to ourselves in a year marked by the birth of the Ministry of Health. The problem is exactly one where the new Ministry will require sound medical guidance. Are detection and quarantine, involving an enormous amount of bacteriological investigation and the control of many thousands of apparently healthy persons, the only or the best ways to deal with the position? Or is it possible that more will be accomplished by less rigorous methods combined with a determined attempt to lessen overcrowding and to educate the public in the ways of cleaner and more healthy living? How much, again, can we expect from widespread schemes of preventive inoculation, and to how many diseases can this method be usefully extended? If we are to succeed in those plans for the gradual diminution of infective disease, in which our hopes are so largely centred, we must secure the hearty coöperation of the population in general. This might well be lost by restrictive legislation applied without clear proof of its necessity. Unpopularity should never be an excuse for inactivity when the facts are clear, but we should do well to build carefully and on sure foundations.

Professor Simon's book serves to impress upon us that action cannot be indefinitely delayed. If we could learn that the financial outlay involved in a thorough and systematic survey of the whole subject would probably save us from endless mistakes, and some possible disasters in the not far-distant future, we should have gained much.

Practical Obstetrics. By E. HASTINGS TWEEDY, F.R.C.P.I., Professor of Obstetrics, Royal College of Surgeons in Ireland, Past Master of the Rotunda Hospital; and G. T. WRENCH, M.D., late Assistant Master. Fourth edition. London: Henry Frowde (Oxford University Press). 1919. Pp. 557. 21*s.*

THIS edition is particularly interesting, as in the absence of the master, Dr. Henry Jellett, on war service, the governors of the Rotunda Hospital asked three past masters to carry on the work. Dr. Hastings Tweedy therefore has had exceptional opportunities of renewing his acquaintance with the clinical teaching of that institution which is embodied in the present volume. The demand for a fourth edition in so short a space of time shows the practical success of the work, which is founded upon the experience gained in what is, taken all round, the best lying-in hospital in the United Kingdom. We may not all of us agree with some of the details of the teaching of the Dublin school, but that the "Rotunda" opinion upon any matter in the science and art of obstetrics must be seriously accepted no one could be found to deny.

In view of the interest the subject is exciting at present the results of the observations of Dr. J. R. Freeland and Dr. B. Solomons on twilight sleep are important. Their report is, on the whole, in favour of the method, but it must be noted that they gave, as a rule, relatively small doses and only 10 out of their 100 cases appear to have exhibited complete analgesia. The authors believe that the results obtained by scopolamine-morphia injections demonstrate that so-called secondary uterine inertia is in reality not due to a "tired-out uterus" but to a "tired-out woman," and that the

appearance of strong labour pains in the early stages of labour is due to an hysterical condition of exaggeration and alarm in a hypersensitive woman. The very constant effect twilight sleep has in producing secondary uterine inertia must, however, be borne in mind, and we regard the teaching that there are two conditions of primary and secondary uterine inertia and a third one of obstructed labour to be the more correct.

The section dealing with the treatment of eclampsia is a very good one, and the fact that in an appendix the authors have reprinted a paper read by one of them before the International Medical Congress, 1911, and also a paper by Stroganoff, gives the reader additional information in regard to the methods described in the text, methods which certainly give extremely good results. The two-bladed cephalotribe is at the present time old-fashioned, and, we imagine, seldom used. If a practitioner attempted to use the instrument according to the description given by the authors he would certainly fail in a difficult case—that is, if we are right in assuming that Braxton Hicks's instrument is referred to. The authors still favour plugging in the treatment of rupture of the uterus, and quote six cases successfully treated by this method. It is a pity they do not state whether these were cases of complete or incomplete rupture. But in spite of these slight differences of opinion between us and the authors, we regard their book as a very good one and one which can be most highly recommended both to students and practitioners as thoroughly sound in its teaching.

Venereal Diseases; a Practical Handbook for Students. By C. H. BROWNING, M.D., D.P.H., and DAVID WATSON, M.B., C.M. London: Henry Frowde and Hodder and Stoughton. 1919. Pp. 336. 16*s*.

IN order that students should benefit to the greatest advantage from any treatise three conditions must be fulfilled. The presentation of the subject must be systematic, clearness and brevity must go hand in hand, and the information afforded should be stimulating.

This volume is divided into two parts, the first treating of syphilis and the second of gonorrhœa. In Section I. (Syphilis) the foregoing conditions are, on the whole, admirably satisfied. From the student's point of view the pathological teaching is extremely good. We can find little which calls for adverse criticism, much that deserves eulogy. The illustrations are on the whole good, but we think that the plates (2, 3, and 4) illustrative of different chancres might be much more definite. More space might have been allotted to the differential diagnosis of penile and other chancres.

It is not necessary or desirable for anyone to attempt to carry out the Wassermann test unless he is justified by long experience in doing so. Every practitioner, however, should understand its rationale, and therefore we are sorry to find that the explanation of this reaction is not as clear as it might be. Now that the importance of the pre-natal treatment of syphilis is recognised, it is to be regretted that no more than 2½ lines are devoted to this subject.

It would have been more satisfactory if the authors had given their readers more definite ideas as to the comparative value of the various substances which are now being used for the administration of intravenous injections. We consider that the paragraph devoted to the "contra-indications" to the administration of salvarsan should at least give some definite information for the benefit of students as to the course to be adopted with a patient who is suffering from chronic Bright's disease, acute nephritis, or aortic disease. The statement that "there are no absolute contra-indications to the administration of the drug" is one that will not commend itself generally to syphilologists. If it is necessary to devote half a page to the illustration of an apparatus for giving intravenous injection by pressure, it is desirable to afford some explanation of its methods of action. Lastly, after calling attention to the emergencies contingent upon the administration of salvarsan treatment, it is advisable to give the student information as to how to combat the same. We are purposely pointing out what we think to be weak spots in a valuable section of the treatise.

But while we believe that the first part of this book is, as a whole, admirably suited to subserve the purpose of its existence as "a practical handbook for students," the same can hardly be said of the second section on "Gonorrhœa." It is not systematic, and therefore it is not clear. We are certain that the student knowing nothing of his subject who comes to this volume for instruction will leave it in a mentally nebulous condition. The aim of a work of this nature should be to instruct a student how to examine and treat a case of gonorrhœa in a methodical fashion. In this respect the authors have failed, and, further, their teaching is not always in agreement with the best views. In regard to the treatment of acute anterior urethritis the authors warn the students with respect to injections as given by a syringe. "No force must be used, otherwise a minute quantity of gonococcus-laden pus may be forced into the posterior urethra and an acute posterior urethritis incited. This is an accident which frequently happens in cases treated by this method." On pages 190–191 the authors advise what they term "urethro-vesical lavation" (generally termed posterior irrigation). They advise that the reservoir containing the antiseptic fluid should be placed at a height of 4½ feet above the level of the patient's pelvis. We feel assured that the danger which they aim at preventing when using the syringe will be lavishly present if the above method of "lavation" be used in a case of anterior urethritis. Again, in dealing with the subject of chronic gonococcal urethritis the authors fail to emphasise sufficiently the value of digital examination of the prostate and of the vesicles. This we regard as a serious omission; in fact, we consider it most necessary to impress upon students the need which exists for the valuable information which is to be obtained from the constant examination of prostate and vesicles. For there is no doubt that the rectal is the high road which leads to success in both the diagnosis and treatment of chronic posterior urethritis.

The consideration of the subject of strictures, their diagnosis and treatment, is inadequate, and when it is considered what can be effected by careful dilatation and the resultant avoidance of urethrotomy the omission is a serious one. Insufficient attention is given to the technique involved in urethroscopic examination. We regret, also, that we are unable to find any reference to the necessity of making a systematic examination of every patient before he is discharged from treatment. The authors suggest that "any persons who have previously suffered from gonorrhœa should submit to an expert medical examination before marriage." This is not enough. Every patient who has been under treatment for gonorrhœa should be systematically examined before he is discharged, whether married, about to be married, or without any idea of marriage. From a sociological point of view the man who has no idea of marriage is likely to prove the most dangerous to the community if he is discharged from treatment without a thorough examination.

We are sure that the authors can make a valuable treatise out of their work if they will boldly throw over altogether the teaching of the schools where it conflicts with recent clinical experience, and will bear in mind that the present-day student must be equipped on every hand for a medico-social conflict.

Through a Tent Door. By ROBERT WILLIAM MACKENNA, M.D., R.A.M.C. London: John Murray. 1919. Pp. 310. 8*s*. net.

THIS book of war essays has none of the robustness and rollicking humour of others of its kind, though it is possibly none the worse for that. Incidents of the war as seen from a field hospital form the basis of the book, but one feels that the author would have been just as happy had his vantage point been an English provincial hospital, for he comments on life rather than on action. He is interested in books, religion, and human nature—in fact, in things in general; and it is merely an accident that he happens to have thought and written in Flanders. Dr. Mackenna has a pleasant, gentle style, somewhat reminiscent of Elia, and on the whole his work reaches a high level. Were we called upon to select any one essay for special praise it would be the one entitled "Through a Tent Door," but many others are almost equally successful. "The Visitant," a work of pure imagination, pleased us least; and "Margarine and Café-au-lait," a desultory discourse on books, might well have been omitted; the kind of thing has been done, and done better, elsewhere. Dr. Mackenna's public may not be large, but it will be appreciative, for his work is thoughtful and sincere.

THE LANCET.

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The Eradication of Epidemic Diseases.

CAN the great epidemics of disease which from time to time sweep over the whole or a great part of the earth's surface be prevented by human effort? Will it ever prove possible to trace them to their place of origin, and by appropriate measures applied there destroy the cause of each disease at its very source? In the case of a large number of infectious diseases human effort can, and does to a great extent, control the spread of an infection once introduced, and limit its disastrous effects on the community. But the aim of the epidemiologist and public health administrator is something higher than this. To them, even more than to the clinician, prevention is infinitely to be preferred to cure, for while he deals with single lives they are dealing with lives in countless numbers. When the recent truly terrible epidemic of influenza (we use the words deliberately, for the deaths caused by that epidemic outnumbered immeasurably those caused by four and a half years of the greatest war in history) swept over the world, how many—or how few—persons were saved from its attacks by individual or by communal measures of precaution? The medical profession cannot claim that the course of the epidemic was seriously affected, still less stayed, by any such measures. Had it proved possible to detect from the outset the place of origin of the disease and to destroy the infection then and there, or at least to prevent its spread beyond local limits, the millions of lives thus sacrificed might have been saved; one more—and perhaps the greatest of all—would have been added to the list of triumphs of preventive medicine; and the very course of history itself might have been changed. And if this is true of influenza, it is no less true of other and allied epidemic diseases.

We have been led along this line of thought by the instructive presidential address delivered by Dr. SIMON FLEXNER before the recent Congress of American Physicians and Surgeons. The address covered much ground, and we only here refer to one or two of its salient points, as they appear in the abstract printed in our issue of last week. As Dr. FLEXNER points out, in the case of one disease at least, the aim we have tried to formulate above has been actually attained. "We have," he says, "a splendid example of eradication of disease in yellow fever. We did not wait for the disease to become epidemic; it was destroyed in its endemic home." But in the case of influenza the problem to be solved is more complex than in that of yellow fever, and more complex perhaps than Dr. FLEXNER'S remarks (of necessity much concentrated in our abstract) seem to imply. "In the history of epidemics," he says, "influenza took its origin in a region somewhere near the Russian border of Turkestan, spreading along the trade routes as rapidly as transportation moved. ..... The endemic focus of influenza is somewhere on the Eastern border of Russia." Consequently he holds that "it is not too much for a reconstructive medical profession to conceive the clearing up a region which by its inaccessibility and its neglect has every 25 or 30 years originated waves of disease spreading over the globe." We should share this hope more willingly were we convinced of the correctness of the geographical premise. In the great pandemic of 1889 and subsequent years there was strong evidence to show that the outbreak did in truth take its origin on the borders of European and Asiatic Russia. The evidence was set forth in two articles[1] published in THE LANCET by Dr. F. G. CLEMOW in 1894, and was based on original and unpublished reports made by Russian doctors in the regions in question to the Medical Department of the Russian Ministry of the Interior at the time of the epidemic. But that evidence was restricted to one particular outbreak of the disease, and we are not aware that it has ever been claimed, or that the historical facts would lend any support to such a claim, that influenza epidemics always or even frequently arise in the regions indicated. The so-called "Spanish influenza" of 1918–19 arose we know not where. The records of its course, owing to the state of the world at the time, were far more imperfect than those of the 1889 pandemic; and, so far as they are available, they do not seem to show the same clear progress from one well-defined centre to the rest of the globe. In this respect influenza must always, save perhaps on rare occasions, offer great difficulties to those who would aim at destroying it at its source. But the aim need not for that reason be lost sight of. The interests at stake and the rewards of success in preventing even one single pandemic, such as that of 1889 or 1918, are on too colossal a scale for a policy of despair; and we fully share the hope that, when order once more reigns in Russia, a careful watch may be kept on the regions which gave birth to at least one great epidemic of influenza, and may yet give rise to another.

But while a massed attack on an endemic focus seems as yet too sanguine a prospect where influenza is in question, the conditions surrounding the origin of the great cholera epidemics offer more hope for the attainment of the aim. The endemic home of cholera is universally believed to lie in Lower Bengal—in the Sundarbans and the delta of the Ganges. The problem of the eradication of this disease, therefore, is not complicated by uncertainty as to its place of origin. The real difficulties arise here when the practical measures necessary for such eradication come to be considered. The large size of the area in question, the engineering difficulties, and the cost, with no *direct* financial profit, of draining and "sanitating" this vast region all stand in the way of a radical solution of the cholera problem. But these are not in truth insuperable difficulties. In a world awake to the blessings of health can any cost be deemed too great or any obstacles be thought insuperable where the saving of millions of human lives and the prevention of incalculable suffering will be the rewards of success? Each of the great epidemic diseases presents its own special problems, and preventive medicine can already claim a wonderful series of triumphs in discovering the causes of most of these diseases and pointing the way to their control. It may no less proudly claim to have opened the eyes of modern statesmen and administrators to the overwhelming importance to the

[1] Recent Pandemic of Influenza, its Place of Origin and Mode of Spread, THE LANCET, Jan. 20th and Feb. 10th, 1894.

State and the people of dealing seriously with the problems of disease prevention. To-day large, costly, and far-seeing measures with this object occupy a place in practical politics. But we like to picture a world where the prevention and eradication of all diseases that can be prevented or eradicated should be the aim—even the *first* aim—of national and international policy and effort; where measures having as their object the saving of millions of human lives would be thought as worthy of a great statesman's energies and of the interest of the public as Free Trade, bimetallism, and the nationalisation of railways. It may—and, indeed, we are not optimistic enough to doubt that it must—take many long years to reach this ideal. But in the meantime much may, and should, be done; and we hold that it should prove quite feasible to trace some, if not all, of the great pandemic diseases to their source and to make a serious effort to stifle them in their cradle. We do not hide from ourselves the vastness of the task or the practical difficulties to be overcome, but modern science exults in difficulties. When the smoke and noise of war have cleared away, and the nations are really at peace again, the statesmen of the world could find no higher or more stimulating aim for their energies than the cleansing of epidemic breeding grounds.

The Teaching of Obstetrics in London.

No one who has read the report of the Committee of the Section of Obstetrics and Gynæcology of the Royal Society of Medicine, appointed to consider this subject, can fail to agree with their conclusions that the present methods of teaching midwifery are very defective. There has been little alteration in these methods for a long time past, and while it is true that the establishment of midwifery wards of recent years in certain of the hospitals has done something towards reform, the main and gravest defect still remains. We refer to the fact, strongly emphasised by the Committee, that the student learning clinical midwifery is completely out of touch with his senior teachers, as he does not see them actually engaged in the work he is trying to learn and seldom has the advantage of their supervision and guidance. This is certainly true of those hospitals, the great majority in London, which have no midwifery ward, and even in those which have it is true to a very large extent. It is generally impossible for the senior members of the staff to be present at any normal labours, and it is no exaggeration to say that in most hospitals they are not there even when a case of abnormal labour is being conducted, and the most the student can expect to see is the performance of the Cæsarean section by one of the visiting staff, a class of case he will seldom meet with and an operation he will probably never attempt. The result of this is that while in medicine and surgery the student has the great advantage of receiving most of his clinical teaching from the visiting physicians or surgeons, in midwifery, just as important a subject, the teaching is mainly in the hands of junior residents or registrars.

This being the case, it is little wonder that the reputation of the London School of Obstetric Medicine is but a poor one, and that research in the subject is practically non-existent. It is high time that some change was made and that the whole matter was put upon a more satisfactory basis. Not only is the clinical teaching of midwifery in London very deficient, but the small number of beds available for lying-in cases is almost scandalous. In these days the medical student no longer should be dependent upon attendance in the extern maternity department for his experience in midwifery practice. In the unsuitable surroundings that obtain in the homes of the poor it is quite impossible for antiseptic or aseptic methods of conducting a confinement to be efficiently carried out, and if they cannot be properly practised they cannot be properly taught, as they should be by example and not merely by precept. One of the pressing needs of London, and, indeed, of every other town in the country, is a more adequate provision of lying-in beds. It should be possible for every woman who desires to do so to be admitted to a properly equipped lying-in hospital, and it should be just as great a scandal to conduct a difficult case of midwifery, possibly necessitating an operation, in the utterly unsuitable surroundings of a tenement house as it would be to carry out even a simple surgical operation amid such surroundings. And yet this is happening every day in the week and almost every hour in the day. In the ratio that exists between the number of beds available and the number of beds required for lying-in cases, we imagine that London is in a worse position than any other large city in the world. It is to be hoped that the new Ministry of Health will take this matter in hand and will insist that the provision of lying-in beds in the large hospitals with medical schools should be such as to render it possible to admit other cases than merely those which are sent in from the maternity, district or by medical practitioners because they require operative interference. The fact that a woman who has to undergo an obstetric operation frequently runs a greater risk than one who has to undergo an ordinary major operation of surgery should be made quite clear to the public, and it is not just or fair that in these circumstances she should be terribly penalised because sufficient accommodation is not to be found in the large voluntary hospitals. The fact that neither the majority of the medical staffs nor the managing committees of many hospitals appear to recognise the necessity for such a provision is becoming a strong argument for placing the hospitals under State control.

But when the beds needed have been provided they will be useless from the student's point of view unless a very radical change is brought about in the present methods of teaching. The crux of the whole question lies in the provision of some means whereby the student can receive his teaching in theoretical and practical midwifery from teachers of a class comparable to those who are engaged in teaching him medicine and surgery. As we have pointed out, at present this is only true as regards systematic instruction in midwifery, the practical teaching being mainly in the hands of junior teachers occasionally but seldom above the rank of a registrar. In the near future, perhaps, several of the medical schools in London will have whole-time properly paid teachers in medicine and surgery, and no one who has given any attention to the needs of medical education can doubt that this step will tend not only to advance and improve the theoretical and clinical teaching, but that it will tend also greatly to the advancement of

research in these two subjects. An appointment in obstetrics on these lines—namely, a whole-time properly paid teacher provided with paid assistants and with adequate laboratory accommodation for the carrying out of research—is urgently needed, and is one of the chief recommendations of the Committee whose report we are considering. Whether such a teacher should be the head of a separate institution on the lines of the Rotunda Hospital in Dublin, or whether he should be closely associated with one of the existing medical schools and take charge of a greatly enlarged obstetrical and gynæcological department in the associated hospital is largely a matter of convenience and detail; the principle remains the same in either case. Until an appointment of this kind is made by which the student will be taught his theoretical midwifery and be able to see clinical midwifery practised and obstetrical operations carried out as they should be carried out, in suitable surroundings by a master of the art, the teaching of midwifery will never make any appreciable progress in London, and the reproach that research in this subject in London is a negligible quantity will never be overcome. We have said little about the teaching of the London student in gynæcology, because on the whole it is satisfactory, the same difficulties do not surround it, and no modifications are really required, but the two subjects cannot, and should not, be divorced. They should be taught together in a single institute, and under the same roof should be located a corresponding maternity and child-welfare centre.

Mind and Medicine.

THE truism that history repeats itself is suggested by the reading of a lecture with this title delivered in the John Rylands Library by Dr. W. H. R. RIVERS, Prælector in Natural Sciences at St. John's College, Cambridge. Continual progress and fresh scientific discoveries notwithstanding, an impartial scanning of the phases or trends of medicine at various epochs in world history points to the conclusion that the human mind in its relation to the practice of medicine moves through cycles in which time is measured not by years but by centuries. Primitive associations of medicine with religion and with magic seem in the fullness of time to be replaced by modern associations not widely differing in essence. Subsequent search for a material basis for disease in a humoral theory is paralleled by a not much more scientific conception of the interrelation of the endocrine glands and their bearing on many morbid states. To the student of medicine the succession of animism by materialism, and of the latter by deeper appreciation of the mental factor in disease does not, however, represent the historical facts other than superficially. At no time has either the mental or the material factor been predominant to the complete exclusion of the other; as long as a dual conception of man's being has existed, so long has medical opinion oscillated between one and other aspect of it, and so will it continue to oscillate. A system of healing styled "New Thought" is in reality very old thought; while the organisms of the germ theory are the counterpart of the worms and snakes of savage medicine.

What is new is the determination of the precise scope of the psychological factor in disease, and the laying down of the principles of psychotherapy. For the time, we may say, the growing point of the study of nervous disease is in the direction of applied psychotherapy, thanks to the immense impetus afforded by the silent appeal of the phalanx of sufferers from war neuroses and psychoneuroses. Behind the therapy looms large the desire to probe further into the why and the wherefore, hence the renewed investigation of psychical theories of disease, and, as Dr. RIVERS justly concludes, the willingness of the great majority of students to consider the position, and to accept, in part at least, the doctrine of pioneers such as FREUD. Appreciation of the importance of psycho-analysis as a means of discovering what lies behind the external phenomena of functional nervous disease implies no acceptance of the Freudian attribution of all neurosis to disordered sexuality; for that matter, there is no finality of interpretation of the symbols, which, in Freudian doctrine, constitute a large proportion of the stuff of the mind, still less of the motives laid bare by such technique. Thus should a hidden spring of action be shown to be linked with some "woman in the case" it would not thereby necessarily bear only a sexual interpretation. In one of his University sermons the late Principal EDWARD CAIRD laid stress on the love of knowledge for its own sake as one of the potent dynamic forces stirring the mind of man to action, and should this be given fuller effect by one in his love for his partner, its tingeing with an added colour does not alter its essentially non-sexual nature.

As the working man insists on his war bonus being permanently incorporated in his wages, so the advances recently made in the understanding of the unseen trends of the human mind will be permanently embodied in medical doctrine. There can be no going back to the barren psychology of the schools. We have learned too much of the significance of the affective or emotional aspects of functional nervous disease to rest content with what is little less than therapeutical "bluff." The casual patient, it must frankly be admitted, knows not merely much about venereal disease that was hidden from his father; he has heard of blood-tests, and demands treatment by injections; he also knows more than some physicians may suspect of how "nerves" should be treated and will not submit to be put off by an airy reassurance. If the modern hospital is to earn or enhance a reputation for healing the sick it must take cognisance of all the ills to which flesh is heir and organise a neurological department for the benefit, among others, of the sufferer from functional nervous disease, presided over by, or including on its staff, someone trained in the recent acquisitions of knowledge and convinced that psychological disorders deserve psychological treatment. This investigation of the underworld of conflicting impulses, desires, and instincts must lead also to the medical man's playing a greater part in the solution of the problems of criminology. The criminal deserves psychological study at least as much as, if not more than, legal. Social and political problems, too, are in their turn based on deeper problems of the trends of the social mind which provide a fit subject for patient research. We should not claim mere psychological analysis to be a panacea for the disorders of the body politic, but we are frequently reminded by intelligent publicists of the real roots of social unrest in feelings and impulses that are essentially only half-expressed, and therefore potential mischief-makers unless dealt with as the psychologist deals with the impulses of the individual. In all this we see a ripe field for systematic investigation by competent workers.

Annotations.

"Ne quid nimis."

OFFICERS FOR THE R.A.M.C.: THE NEW CONTRACT.

IN the recent Students' Number of THE LANCET we regretted the inability to publish the rates of pay that would be contained in the new contract which the Army Medical Service was prepared to offer to medical practitioners, though we were able to announce that these terms would be of a very advantageous sort. This week the new contract has been made public, and the conditions under which the War Office is prepared to accept the services of medical practitioners, including those who have been demobilised, will be found set out on page 503 of this issue. The contract, it will be seen, is in many ways a great improvement on the old one. The pay is increased for lieutenants and captains, so that the pecuniary start which the young man receives by qualifying for a commission in the R.A.M.C. is now a distinctly good one. There are allowances for foreign service, and specialist or charge pay is available in certain conditions. As directorates in pathology and in hygiene have now been created within the Army Medical Department, specially selected men can rise through all the ranks of the Army to Major-General on the strength of their scientific work, and we have before now insisted on the attractive nature of the outlook which is thus provided for the scientifically minded man. Applications for commissions should be addressed to the Secretary, War Office, Cornwall House, Stamford-street, London, S.E. 1. The full regulations for admission and form of application will be found in the Students' Number of THE LANCET, August 30th, 1919, p. 397.

THE MEDICAL ASPECTS OF STATE SCIENTIFIC AND INDUSTRIAL RESEARCH.

THE report of the Committee of the Privy Council for Scientific and Industrial Research for the year 1918–19, issued last week, claims for the work of the department over this period a steady growth both in usefulness and in amount. This is the fourth annual report of their proceedings, and a review of the detailed work of the Advisory Council, which forms the executive of the department, fully justifies this claim. The personnel of this Council includes authorities of the highest standing on the manifold subjects investigated, whilst the assessors to the Council, responsible for the departmental work and organisation of research, are all experts in the various Government Departments which they officially represent. The outcome is an official compilation of progressive work in research and industry, the results of which deeply concern the future industrial welfare of the nation. The solvency of the nation may well, indeed, depend upon the earnestness with which the lessons conveyed by this work are absorbed.

Scientific and industrial research are wide terms of reference, and the scope of inquiry includes, as will be anticipated, medical matters of insistent interest. Such, for example, are mine rescue apparatus, the preparation and preservation of foods, cold storage and its effect on meat, oxygen research, industrial fatigue, the rendering of "power alcohol" undrinkable, and the patent laws, in so far as they affect discoveries which concern the health and life of the people. It is interesting to learn that the Advisory Council recognise the strong professional tradition of the medical profession in this country in regard to the patenting of inventions of genuine value for the preservation of health or of life, and the Council have provisionally decided that applications for patents within this category should be refused. It is admitted, however, that the whole question needs careful watching and discussion by those best able to form a judgment. There seems to be a suggestion that the State should take over such inventions and reward the inventor on a scale which would compare reasonably with that compensation which he would gain by patent protection. The scale of remuneration by the State in such a case would form an interesting contrast with the enormous profits made from the sale of secret remedies based on no discovery at all; these profits, in the main, are mercenary exploitations purely and simply. Such preparations are in no sense patented medicines, for in that case they could not be secret remedies, as a patent implies the publication and protection of their composition. The Government compels the use of a stamp in the sale transactions, which means no more than the stamp on a receipted bill exceeding £2 in value. In other words, the stamp is a duty and in no sense a guarantee that the preparation is an approved therapeutic agent. This official procedure, however, no doubt helps materially the sale of many nostrums. We hope the Government will introduce a much-needed reform on the lines suggested in the admirable report of the Select Committee of Patent Medicines, which was ordered by the House of Commons to be printed on the very day war broke out. Since then nothing has been done. The Committee of the Privy Council for Scientific and Industrial Research might note these things. It is a body with great prestige, and its constitution, which has recently come under acute criticism, may put it out of sympathy with pure research, but should enable it to act forcibly in the cause of practical reforms.

A CASE OF LETHARGY.

THE case related by Dr. Grace H. Giffen Dundas in our issue of last week presents features of interest and rarity. The illness from which the patient, a young woman, suffered had an acute onset, with rise of temperature, increase of pulse and respiration, headache, sweating, and other signs pointing clearly to a toxi-infective condition. These general symptoms were coupled with others of localising significance, including paresis or paralysis of various motor cranial nerves (though Dr. Dundas excludes the third nerves she specially mentions sluggish pupil reactions and partial double ptosis), resulting in, among other things, a mask-like facies and inability to depress the lower jaw. The arms and legs were rigid and motionless, and there was a double extensor response. Bladder and rectal control were greatly impaired. The patient slept deeply most of the time. There can be little doubt that the correct neurological diagnosis is encephalitis lethargica, which is usually characterised by general symptoms of cerebral toxæmia and localising symptoms pointing to mesencephalic involvement, precisely as in this case. The lower motor cranial nerves were rather more

involved than the upper, as occasionally occurs; the limb paralysis is an index of the severity of the attack, but does not necessarily signify a structural change in the cortico-spinal paths or centres; an extensor response may occur where no change in structure is demonstrable. An examination of the spinal fluid by lumbar puncture would doubtless have been of considerable help in diagnosis if only for the exclusion of other conditions with which the case might be confused. It is not quite clear whether the patient showed a true catatonia or not—a common symptom in lethargic encephalitis; Dr. Dundas speaks of the cataleptic-like condition, but does not state whether, for instance, the limbs remained in any position in which they were put; as there was no voluntary movement the test would have had to be made by lifting the arms passively off the bed. One of the distinctly unusual features is the loss of the sense of position in the limbs; the fact that the patient did not know her limbs were being manipulated may also be taken to indicate cutaneous loss of sensibility, and there is no a priori reason why such might not occur in encephalitis. On the other hand, however, she was aware of her incontinence and knew when the catheter was being passed, so that it is possible the loss of position and direction was an index of the cerebral apathy. To this suggestion it might with justice be replied that were such the case she would probably also have been indifferent to her incontinence. Of considerable scientific interest are the peculiar hallucinations, as exemplified by "her eyes up at the roots of her hair and her teeth several inches in front of her mouth." Some alienists have insisted that hallucinations of the muscular sense in the insane are of unfavourable prognostic import as compared with those of other senses (sight, hearing), and indicative of a greater degree of cortical defect. Be this as it may, Dr. Dundas's patient made a perfect and on the whole rather quick recovery considering the acuteness of the illness. One might hazard a conjecture that the ignorance of the position of the limbs and the erroneous references in respect of other parts of the body (eyes, teeth) were both the expression of a disturbance of the "sense of attitude," which is something more than mere impairment of sense of position.

EROSION OF THE GREAT VESSELS OF THE NECK IN SCARLATINAL ABSCESS.

CERVICAL adenitis with abscess formation is a common complication of scarlet fever. A very rare consequence is erosion of one of the great vessels of the neck, with serious and even fatal hæmorrhage. In the Johns Hopkins Hospital Bulletin for August Mr. T. M. Rivers has reported the following case. On Dec. 1st, 1916, a girl, aged 5½ years, vomited and had slight fever. Two days later a practitioner was called in, found a small membrane on the right tonsil, and administered 15,000 units of diphtheria antitoxin. About Dec. 5th the cervical glands began to swell, she became stuporous, and did not pass urine for 56 hours; then a small amount of urine containing much albumin was passed. In the third week a diffuse maculo-papular rash appeared and she was admitted to hospital three days later. The temperature was 99° F. and the pulse 110. She was drowsy and emaciated. The tongue was heavily coated and the breath foul. Part of the tonsil, soft palate, and posterior pillar on the right side had sloughed, leaving a ragged hole lined with greenish-white pus. The cervical glands were enlarged. There was a fluctuating mass of the size of a lemon, deeply situated, below the right angle of the jaw. The liver extended two fingers'-breadth below the ribs. Over the body was worm-eaten desquamation. The palms and soles were very dry and later desquamated in a way typical of scarlet fever. A throat culture was negative for diphtheria bacilli, but showed long chains of streptococci. The urine contained 3 g. per litre of albumin, hyaline and granular casts, pus cells, red blood corpuscles, and epithelial cells. The abscess was punctured and 2 oz. of pus escaped, from which a hæmolytic streptococcus was grown. She seemed to be doing well until 11 P.M. on Dec. 26th, when she was found in a pool of blood, exsanguine, pulseless, and gasping for breath. The bleeding had stopped and the wound was not disturbed. A subcutaneous injection of 300 c.cm. of saline solution was given and an intravenous injection of 225 c.cm. of citrated blood obtained from the mother. There was another hæmorrhage of about 2 OZ. at 7 A.M. and at 11 A.M. Blood began to spurt from the wound at 1 P.M. Dr. Dandy, the resident surgeon, enlarged the incision into the abscess and found erosion of the lingual and external carotid arteries and internal jugular vein, the hæmorrhage coming from all three sources. The common carotid was ligatured and the bleeding from the jugular was controlled by packing. The child was greatly exsanguinated, and was given 150 c.cm. of citrated blood which had been kept on ice since the transfusion the previous night. She rallied immediately, but the pulse remained irregular for weeks. On the 28th the hæmoglobin was 40 per cent. On the 29th she received 200 c.cm. of citrated blood. On the 30th her hæmoglobin was 58 per cent. Both ear drums were punctured, releasing pus. On Jan. 1st there was another large hæmorrhage. Evidently the carotid ligature had sloughed. The bleeding was controlled by pressure and 150 c.cm. of citrated blood were given. General œdema, insensibility to pain, waxy flexibility, exaggerated reflexes, double ankle clonus, and loss of memory for recent events developed. She gradually improved and the wound healed slowly under Dakin's solution. Recovery ensued. Mr. Rivers could find recorded only about 50 cases of erosion of the great vessels of the neck after scarlet fever. Curiously the great majority are old, only one being reported subsequently to 1885. Two were recorded in our columns in 1870[1]—one by Lovegrove, in which the patient bled to death in a short time through ear, nose, and mouth, and the other by Hymes, in which the patient bled to death through ear and mouth. Is the absence of cases in recent years due to diminished virulence of the disease? Veins and arteries have been involved about equally. The bleeding may come from an opened abscess, from the ear, or through the mouth and nose. Most cases have been fatal.

MEDICAL EDUCATION IN THE UNITED STATES.

THE annual educational number of the *Journal of the American Medical Association* (issue of August 16th) contains an interesting summary of the facilities for medical study offered in the United States of America for the year ending June 30th, 1919. It is well known that the United States had at one time more medical schools than the rest of the world put together, the supply far exceeding the needs of the country. Reduction in

[1] THE LANCET, 1870, i., 729, and ii., 431.

the number to one-half has been one of the principal signs of progress in the last 15 years, and the reduction is still going on. Of the 13,052 students studying medicine (578 less than in 1918) the very large majority—94 per cent.—were doing so in "non-sectarian" colleges. Homœopathic colleges scored an attendance of 397, "eclectic" colleges of 86, while 310 students were obtaining their instruction at a group of colleges, 2 of them "semi-osteopathic" and outlawed in their own State of Missouri, the third "eclectic" and not subject to a set curriculum. It is evident that in the United States the tendency is now prevailing towards a standardisation of medical training on broad, orthodox lines. 2656 students graduated in medicine during the year, 44 per cent. of them being already graduates of colleges of liberal arts, witness of a growing appreciation of the value to medical practice of a sound preliminary training. Compared with conditions ruling here, it is surprising to note what a small proportion of their cost of training is paid by medical students themselves. Financial reports from 82 schools show an average annual expenditure per student of $419, of which the student only pays $150. A State-controlled medical service should not be difficult to introduce in a country in which the State already contributes, directly or by endowment, 60 per cent. or more of the cost of medical training. In regard to the character of the training, the most important change noted is the gradual replacement of lectures and lecture clinics by bedside training in small group clinics. Thus in all important respects the medical curriculum this side and that side of the Atlantic is converging towards a common objective.

PELLAGRA AMONG TURKISH PRISONERS OF WAR IN EGYPT.

A VALUABLE contribution to the literature of pellagra has recently been published at Alexandria by the military authorities, dealing with the occurrence of the disease among captured Ottoman troops. A prevalence of pellagra having been reported among the Turkish prisoners of war interned at Kantara, in Lower Egypt, the D.M.S. Egyptian Expeditionary Force appointed a committee to investigate whether the disease in question was in reality true pellagra, and, if so, whether the prisoners of war were generally infected before or after their capture; whether the disease was increasing; and, if so, was it spreading by infection from case to case or by infection due to location or local conditions; or whether, on the other hand, it was due to some defect in diet or to other general conditions. Further, the committee was to investigate the ætiology of the malady in its relation to bacteria, protozoa, blood conditions, pathology, and food. The committee consisted of Colonel F. D. Boyd, C.M.G., A.M.S., consulting physician to the E.E.F., and Lieutenant-Colonel P. S. Lelean, C.B., R.A.M.C., assistant professor of hygiene, R.A.M. College, along with six collaborators, each an expert, respectively, in pathology, bromatology, protozoology, biochemistry, hæmatology, and bacteriology. The inquiry was begun on Oct. 7th, and the report[1] is dated Dec. 31st, 1918. The conclusions of the committee of inquiry may be summed up as follows: The disease was true pellagra and the patients were generally pellagrous before capture. The great majority of the cases that were systematically questioned stated that they had similar symptoms before capture, while amongst those examined shortly after they were made prisoners many were found suffering from the fully developed disease. For example, in one batch of 1300 prisoners seen on their arrival direct from the front, 18 per cent. had the malady fully developed. There was no evidence of case-to-case infection, and none pointing to location or local conditions having had anything to do with the causation or spread of the disease. The camps at Kantara left little to be desired as regards their situation and hygienic condition. As regards diet, judged by existing standards, the food issued to both non-labour and labour prisoners provided an ample margin over the requirements of healthy men and gave a suitable balance of proximate food principles. Any increase in the disease has not been due to other general conditions than those unavoidable for prisoners in monotonous confinement in an alien, hot, and arid country, with no stimulus to check the inevitable decline in their physiological resistance. Pellagra as a primary or immediate cause of death played an insignificant part in the series of cases that were examined. As a contributory cause its influence was shared by other debilitating diseases, of which chronic dysentery was the worst. After thorough investigation by the various experts, no evidence was found as to the ætiological relationship of the disease to bacteria, protozoa, or to blood conditions. With regard to food, the committee found so constant an association between the biological protein value of diet and the occurrence of pellagra that they considered that the lack of sufficient biological value of protein stands in ætiological relationship to pellagra, certainly as an exciting factor, and possibly as the determining factor. The report states that the deficiency in biological value of protein may be: first, absolute, as determined by the standard for normal persons, or, secondly, relative, as determined by individualistic correlation between food assimilation and energy expenditure, and thus modified by ill-health and idiosyncrasy. A large proportion of the cases showed helminthic and flagellate infections of the intestines. These cannot be regarded as causal factors, but merely contributory to digestive disturbance and malnutrition. Pellagra produces loss of resistance to the invasion of bacterial and protozoal disease, and this is, therefore, a contributory factor to a high rate of mortality. The recommendations made by the committee were:—1. In view of the pellagra admission rates having remained approximately constant in non-labour camps during the last two months, and having diminished so markedly in labour camps in the present month (December), it is considered that the full authorised diets are adequate, and that it is not necessary at present to introduce any cardinal change. 2. Full variety should be given under the alternatives of the existing ration scales, and close supervision should be exercised over preparation and cooking of food, with special regard to pulses in both respects. 3. Any increase in pellagra should be met by an increase in animal protein; the occurrence of œdema should be met by an increase in fat. It may be added that over 2000 German, Austrian, and Bulgarian prisoners of war occupied a compound immediately adjoining that occupied by 6000 Ottoman prisoners. Both compounds had been living under precisely the same conditions, but

[1] Report of a Committee of Enquiry regarding the Prevalence of Pellagra among Turkish Prisoners of War. Published at Alexandria. (Not on sale.)

not a single case developed among the Germans, Austrians, or Bulgars, whereas there were some 300 cases among the Turks in the adjoining compound. No case of pellagra occurred among the British troops. The Turkish prisoners for long periods prior to capture had been on rations considerably below the value of those they received after arrival at Kantara, and also below the standard of minimal needs, and had been subjected to great physical strain and privations.

GREAT MAURITIANS.

MAURITIUS, whose fate is in some places under question, although only three times the size of the Isle of Man, is—with its 370,000 inhabitants—more than twice as densely populated. With an oceanic climate and a mean temperature of 74° F., it consists of highly fruitful valleys separated by wooded spurs running up to over 2500 feet in height in several places. The island has changed hands more than once. Occupied by the Dutch in 1598, it was abandoned by them in 1710, when the French took possession, until precisely a century later it fell to the British, whose tenure was confirmed by the Treaty of Paris in 1814. French is the current language of the "Isle of France," while English is officially used in the courts of law. Dr. Joseph Rivière, of Paris, whose name heads an appeal on behalf of his fellow Mauritians to the Prime Ministers of England and France, recalls the names of a number of famous Mauritian creoles, using the term in the strict French sense. One of these, Charles Edward Brown-Séquard, son of a sea captain of Galway origin and born in Port Louis in 1817 of a Provençal mother, was an ornament alike to medicine and to his island home. His whole-hearted devotion to the cause of experimental physiology, for which he renounced a professorship in Virginia, a fashionable practice in London, and an easy competence in New York, entitles him to a place by the side of Claude Bernard, with whom he shares the honour of demonstrating the existence of a nervous mechanism presiding over the physics of the circulation. Brown-Séquard's cosmopolitan origin made it appropriate for him to preside over the Société de Biologie in Paris at the same time as he was the recipient of the Baly medal of the Royal College of Physicians of London. He died in Paris in 1894.

THE MORBID ANATOMY OF MALARIA.

Dr. Leonard Dudgeon and Dr. Cecil Clarke made a notable contribution to our knowledge of the pathology of malaria when, in 1917, they published in THE LANCET an account of their observations on cases of paludism in Macedonia, and more especially on the severe fatty degeneration of the cardiac muscle which they had been able to demonstrate in a certain number of cases of pernicious infection. In a second paper, which appeared in the July number of the *Quarterly Journal of Medicine*, they record the results of "An Investigation on Fatal Cases of Pernicious Malaria caused by *Plasmodium falciparum* in Macedonia." The material on which the investigation is based was collected with the definite object of correlating, as far as possible, the clinical history with the microscopical examinations, and throughout the paper this useful method of correlation has been followed. When dealing in this communication with the condition of the cardiac muscle previously described, and which was found to be a diffuse fatty degeneration similar to what is met with in acute diphtheritic toxæmia, the authors point out that the effects of a long period of hot weather acting on men unaccustomed to such heat, and the fact that the military situation prevented the necessary degree of rest being obtained, undoubtedly played a part in the ætiology of the condition. Other matters to which special attention is directed are the hæmorrhages into the pulmonary alveoli and the pathological changes seen in the suprarenals. As regards the latter, the most constant lesion has been the reduction of the fatty lipoids of the cortical layers. In a few instances other important histological changes are noted, but the authors consider it would be incorrect to attribute the fatal result in these cases to a disturbance of the functions of the adrenals. This is important from the point of view of treatment, as experience has shown that the administration of adrenalin in such cases produces no permanent beneficial effects. This is to be expected, for the action of the drug rapidly passes off, while the gross changes in the glands are already established. There are other points of interest in this paper, which merits the close attention of all interested in the pathology of malaria. It may be mentioned that the authors found no evidence of any intracellular form of the malarial parasite. They purpose publishing further observations on the tissue changes in chronic malaria associated with grave anæmia.

SYPHILIS IN THE NEGRO.

IN an article based on the general experience of one of the authors in dealing with syphilis in the Southern States, and upon the intensive study of 300 consecutive cases of syphilis occurring in negro soldiers, Major Loyd Thompson and Lieutenant Lyle B. Kingery[1] state that in the negro syphilis is contracted on an average at an earlier period of life than in the white race. Twenty per cent. of the 300 cases were patients with chancres, ranging in duration from a few days to several months. A striking characteristic was that of indolence. In the great majority of cases the chancre had been in existence for a much longer time than was usually found to be the case with similar lesions in the white race. This occurrence is attributed by the writers, who have made a careful collation of the existing scanty literature on the subject, to the fact that during the period of sexual activity the average negro has a succession of penile lesions. As regards the secondary manifestations, the writers agree with Hazen that macular and maculo-papular eruptions are not common. On the other hand, the annular lesions of early syphilis are remarkably common and may be said to be almost peculiar to the coloured race. Involvement of the mucous membrane appears to be more frequent in the negro and is often characterised by hypertrophic tendencies. The general lymphadenitis, which is confirmatory evidence of syphilis of some weight in the white, is so frequently found in the non-syphilitic negro as to be of doubtful value in diagnosis. Although there is a general consensus of opinion that the osseous system of the negro is more frequently involved than that of other races in syphilis, the writers met with only four cases in their series, but explain this discrepancy by the

[1] American Journal of Syphilis, 1919, iii., 384–397.

fact that their cases consisted of young individuals in whom only the secondary type of lesion, if any, would be likely to be found. The same reason accounted for the absence of any visceral involvement in their cases. As regards prognosis, the chances for recovery in the negro are not so favourable as in the white, as the large majority of the coloured race are totally indifferent to the fact that they have syphilis when no lesions are manifest, and only submit to treatment while outward evidence of the disease is present. On the other hand, the negro is less prone than the white to develop complications involving the central nervous system, especially paresis and tabes, although arteritis and aortitis are quite common and frequently fatal. The writers have been unable to confirm the statement that the negro more frequently shows a severe reaction to salvarsan than the white, as out of several hundreds of injections in the present series only two or three reactions occurred, none of which could be termed severe.

MEDICAL ABSTRACTS AND REVIEWS.

NEXT month appears the first number of *Medical Science: Abstracts & Reviews*, published for the Medical Research Committee by the Oxford University Press. This publication is the lineal successor of the Medical Supplement to the Daily Review of the Foreign Press, issued by the General Staff of the War Office, which made its appearance privately in January, 1918, with a view of keeping our Army Medical Staff in touch with useful enemy inventions and discoveries, soon to take on a wider character and to become a work of reference to foreign literature accessible to the medical profession as a whole. The Medical Supplement ceased with the issue of April, 1919, and the index to this truncated volume is in our hands. Serviceable as it was in the special circumstances of the time, the format was of a makeshift kind, and not a little unworthy of its contents. That is all to be made good in *Medical Science*. The first number contains 130 pages of agreeable size (9¾ × 6 inches), the printing easy to read, well arranged and spaced. The choice of different varieties of type for the names of authors and periodicals and for the titles of articles is judicious and might well become the standard for such things. It has, we believe, been in the minds of those who have spent much time and thought on such apparent trifles that their efforts might result in an increasing homogeneity in the publication of scientific matter. The contents consist of a series of "reviews" or critical summaries of articles on a common subject culled from various sources. Some of these, taken at random, are: spina bifida, habitual or recurrent dislocation of the shoulder, typhoid and paratyphoid diseases, dysentery, lethargic encephalitis. They occupy two-thirds of the first issue, the remainder being "abstracts," or similar critical reviews dealing with a single paper or article. In either case, the referring is done by men widely conversant with their subjects. The names on the title page of those giving editorial superintendence in the subjects named are: surgery, Mr. W. G. Spencer; medicine, Dr. J. D. Rolleston; pathology and bacteriology, Dr. W. Bulloch; neurology, Dr. F. M. R. Walshe; radiology, Dr. W. S. Lazarus-Barlow and Dr. Sydney Russ. In most cases we gather from the initials that they have actually done the work themselves and not merely superintended the work of others. We have dealt with these external tbings in detail, for the publication is a novelty; how great a novelty is shown by the fact that no familiar English words occur to the mind to represent the various sections. "Review" can, of course, well be used in the sense of a Sammelreferat, but it is in common use for the critical examination of a single book. What term other than Referent suggests itself for the person who reviews and abstracts? Is there any equivalent in our tongue for Format? All this goes to show that what is being attempted by the Medical Research Committee is something which has hitherto hardly been attempted in this country in relation to medical science as a whole. There are those who contend that the Centralblatt is a growth which flourishes only in continental soil. But its foundation should be laid in industry and fair-mindedness, and these are qualities which we should like to think are indigenous. We wish every success to our contemporary.

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE last meeting of the British Association for the Advancement of Science was held at Newcastle in 1916, when the proceedings were devoted entirely to the discussion of a limited number of scientific papers. In the spring of 1917, when the general outlook was black, the Council, after consultation with the local committee, decided to cancel the summer meeting which was arranged to take place at Bournemouth, this being the first time in the history of the Association that an annual meeting was not held. The annual event was resumed at Bournemouth on Tuesday last, marking the passing of the great ordeal. The President, Sir Charles A. Parsons, D.Sc., F.R.S., delivered an interesting address on the future opportunities, position, and welfare of the nation. We are gathered together, he said, at a time when, after a great upheaval, the elemental conditions of organisation of the world are still in flux, and we have to consider how to influence and mould the recrystallisation of these elements into the best forms and most economic rearrangements for the benefit of civilisation. The address presented an absorbing review of the events of the war in the light of scientific developments and applications. The subjects traversed related, naturally enough, to those great technical issues, to which Sir Charles Parsons has devoted intensive study. The position of the power resources of the nation was clearly brought forward, and the direction in which its energies should be concentrated in the future outlined in plain and convincing terms. In regard to fresh sources of power, Sir Charles Parsons revived his suggestion of tapping volcanic power by sinking a shaft to a depth of 12 miles, which would take 85 years to complete, at an estimated cost of £5,000,000. The addresses of the presidents of the various sections were delivered on Tuesday morning, and the usual reading of scientific papers followed. In these communications the speakers by common consent referred mainly to the opportunities presented to science, as accelerated in scope and processes by the war, for obtaining official recognition. The proceedings come to a close to-day (Sept. 13th)

AN INDUSTRIAL MEDICAL SERVICE.[1]

III.—THE MEANS OF PROMOTING THE SERVICE.

OUR distinguished contemporary, the *Times*, has recently done good service in pointing out,[2] as we had already done, the development which is taking place in relation to industrial medicine. We have no doubt that employers are beginning to recognise the value of this new branch of preventive medicine; nor have we any doubt that the workers will welcome the appearance of the factory medical officer. We also entirely agree with the *Times* as to the training and knowledge required by those who undertake the work; but we feel some doubt as to the suggestions put forward that the General Medical Council should "found" a diploma in industrial medicine, and that the Royal Society of Medicine should forthwith form a section devoted to this subject. Industrial medicine must prove itself by deeds, and by showing employers of labour its economical value, and the workers its capacity for increasing efficiency and diminishing suffering. By such spade work only can foundations be laid. There is no royal road to construct a building by commencing with specious decorations.

What Need is there for a State-recognised Diploma?

On the side of curative medicine we do not find a diploma for the ophthalmic surgeon, another for the gynæcologist, for the rhinologist, the dermatologist, the bacteriologist, and the X ray operator. Nor in preventive medicine is a special diploma demanded from the tuberculosis officer, the school medical officer, or the officer of the maternity and child-welfare clinic. The Diploma of Public Health as it exists to-day, though the scope of its requirements might, as Sir G. Newman has pointed out, be advantageously widened, is a sufficient portal of entry to preventive medicine. By all means let teaching authorities grant additional certificates to those who have benefited by special courses of instruction; this has long been the custom in curative medicine, and Manchester has already acted in this way in relation to industrial hygiene. Let us follow this example and avoid multiplication of portals of entry. Let us strive to obtain for industrial medicine recognition in the D.P.H. course and also in the earlier training of the medical student. The latter is a stronghold to attack, for the battlements are manned by the teaching consultants whose knowledge of general practice and of the life of the people is not conpicuous, while their acquaintance with factory life and the occupations of their hospital patients is woefully deficient. How many ophthalmic surgeons have been down a coal mine? Yet they teach on miners' nystagmus. How many dermatologists have been in an engineering factory to justify their comments on lubricant dermatitis? How many physicians have inspected the conditions under which lead-poisoning is contracted? In fine, what example do these teachers give to students in investigating at the fountain head the causation of even the obviously occupational diseases that come before them? Joseph Bells are indeed scarce.

The proceedings of sections of medical associations are liable to become far too select and specialised to recommend without urgent need the multiplication of sections; and industrial medicine to-day needs to excite interest, not to retire into seclusion. Further, anyone who has watched the proceedings of the Epidemiological and State Medicine Section of the Royal Society of Medicine must have noted that ample opportunity has been given for the discussion of industrial problems; among others, phthisis in industry; T.N.T. jaundice; industrial accidents have recently occupied the section, but the attendance at the meetings has not been such as to justify a new section.

Bringing Conviction to the Employer.

A more healthy line of advance is being followed in the United States, as may be seen from our report of the American Medical Association held in June last. Stress was laid on the value of medical service to industry from examples of what has already been done. "Show," said Dr. Hastings (Toronto) "the employers of labour how the loss of 10 to 15 per cent. of efficiency in the employee could be saved, and they would be willing to put in good ventilation or any other desired improvement." Another American writer elsewhere[3]: "One of the greatest expenses in industry is the cost of labour turnover, and nearly 4500 new employees were examined to keep 3000 positions filled. In one department the work is of such a character that it costs $100 to teach a new employee to become efficient." Greenwood has shown[4] that in this country labour turnover is much the same as in the States. We have about 8 millions employed in factories alone; let us take the annual migration of workers at rather less than the probable cent. per cent., say at 6 millions; and the cost of engagement and training at only £1 a head; we arrive at an annual charge on industry due to the present-day trial and error method of engagement of *6 million pounds*. Greenwood's investigation further indicated that careful selection and supervision of workers can divide this turnover by three. Four millions so saved would far more than cover the total cost to industry of an adequate medical service; and this matter of turnover is only one of many ways in which the service would benefit industry, and through it, as no other medical service can, the health of the community.

Avoidance of State Control.

What is required to-day is to interest employers as the Americans are doing. A letter appearing in our correspondence columns from the director of the Industrial Welfare Society suggests that a nucleus for this interest is already existent. A further need is to avoid stereotyping functions, the result of State "recognition," at too early a stage. From this industrial medicine is suffering to-day; and one fence to be surmounted is the employer's disgust with the work of the certifying factory surgeon who is called upon by the State to undertake for 6*d*. work worth six times that sum, and who, therefore, does badly what he was not originally called into existence to perform. Once birth certification was established the post of certifying surgeon should have been abolished; it has only lingered on to the harm of medical progress. Let the State even at this eleventh hour abolish the post, step aside, and allow the factory medical officer to evolve naturally, his appointment being made and his services remunerated according to the laws of supply and demand.

We note with satisfaction that the new Ministry of Health shows no inclination to take a hand here. Those who direct the policy are clearly too wise and far-seeing. Knowledge must always precede progress, and industry will resent any medical service forced on it. But once employers know its value there will be no need for State action, unless it be to assist. Such assistance was recognised during the war when the salary of a factory medical officer was allowed to be charged as a working expense when calculating excess profits duty. No more was needed or is needed to-day. Industrial medicine is too vigorous a child to require the swaddling clothes of a diploma or the supporting irons of State orders to enable it to grow to a sturdy manhood.

[1] Previous articles appeared under this heading in THE LANCET of June 28th, The Need of an Industrial Medical Service, and July 5th, How to Start an Industrial Medical Service.

[2] The Times Trade Supplement, August 23rd, 1919.

[3] Medical Inspection of Factory Employees, M. A. Austin, M.D., Journal of Industrial Hygiene, June, 1919.

[4] Final Report, Health of Munition Workers Committee.

PENSIONS AND ALLOWANCES FOR DISABLED MEN.—The revised scale of disablement pensions for the higher ranks affecting soldiers and airmen comes into force as from Sept. 3rd. It provides an increase of 17 per cent. to 19 per cent., varying with the rank, on the previous rate (including bonus) for total disablement, in addition to allowances in respect of wife and children. Various alterations and adjustments have also been made for widows of men in all services. The new rates will continue for at least three years, and thereafter will be subject to readjustment according to the cost of living, but in any case they will not be lowered by more than 20 per cent., or under the previous rates (including bonus). The Ministry of Labour and the Ministry of Pensions make the following announcement:—

1. War Pensions Committees are authorised, where recommended by the medical referee, to continue to pay allowances to disabled men in training under the Ministry of Labour, over and above the training allowances which they are receiving from the Ministry of Labour for (*a*) "constant attendance" and (*b*) special diet.

2. The divisional directors of the Ministry of Labour are not responsible for the granting or payment of these allowances, which come under the heading of treatment, and any disabled men who desire their continuation or authorisation should apply to their War Pensions Committees.

THE TEACHING OF OBSTETRICS IN LONDON.

THE following is an abstract of the report made by a committee to the Council of the Section of Obstetrics and Gynæcology of the Royal Society of Medicine on the Teaching of Obstetrics and Gynæcology to Medical Students and Graduates in London.

Under their terms of reference the work of the committee fell into two parts:—(1) The present methods of teaching midwifery and gynæcology to medical students and graduates in London. (2) The changes required to make it more efficient. The committee point out the great importance of the subjects they were called upon to examine, not only to the medical profession but through it to the women of the country and to the community in general. The provision of doctors more highly trained in practical midwifery work, and the provision of adequate hospital facilities for dealing with serious complications of pregnancy, labour, and the lying-in period, are matters which are intimately related to one another, and are of equal importance to the public health. A large increase in the present hospital accommodation for midwifery cases in London is as urgently needed as an improvement in the training of medical students. And, further, if by suitable arrangements better training in the management of infants could be associated with midwifery training, a great advance would be made in dealing with the difficult problem presented by the high rate of infant mortality.

A.—*The Present System: Midwifery.*

Systematic teaching.—Systematic lectures are given in all the hospitals by the obstetric physicians, usually in the summer term—i.e., once a year only: the number of lectures varies from 20 to 40. A "practical midwifery" course, which includes operative demonstrations on the dummy, is also given either by the obstetric physician or by the tutor. In the latter case it is combined with the tutorial class. In most hospitals the regulations provide that students attend the systematic lectures and the practical midwifery course before being allowed to attend cases of labour. The Dean of the school may, and sometimes does, suspend this rule.

The tutorial or revision classes are held each term by the tutor, and are attended mainly by the students then preparing for the examination in midwifery and gynæcology. Attendance at the systematic and practical midwifery courses is compulsory under the regulations of the examining bodies. Attendance at the tutorial classes is optional, but in practice all students do attend.

Clinical instruction in normal and abnormal pregnancy.—Systematic instruction is given in the gynæcological wards and out-patients' departments of all hospitals on the diagnosis and management of pregnancy; the clinical material consisting of such women as present themselves for one reason or another during pregnancy. Pregnant women who desire to be attended at their own homes are usually required to present themselves at the hospital for examination beforehand. They are seen, usually, by an obstetric physician or by the tutor, and any students who care to attend are present and are allowed to examine the patients; the attendance of students is, however, not as a rule compulsory, and in practice sufficient use is not made of this department for purposes of teaching. Except in the case of hospitals with a midwifery ward, this is all the provision which is made for instruction in normal and abnormal pregnancy.

Clinical instruction in the conduct of labour.—In four hospitals midwifery wards are established for the instruction of medical students; others have a midwifery ward which is used chiefly for training midwives; for the purposes of this report these are of no value. The remaining hospitals have no midwifery wards at all at the present time. In every hospital serious complications of labour can be admitted to the gynæcological beds, where they come under the charge of the obstetric physicians; in many cases, however, the registrar actually deals with them.

In the case of *hospitals with no midwifery ward* the training of students in the actual conduct of labour, normal and abnormal, is practically non-existent. In order to attend the 20 cases required by the regulations of the examining bodies the student is attached to the maternity district of his hospital; previous to this he has attended the lectures mentioned above, and, in addition, in some hospitals special demonstrations are given by the tutor or the resident obstetric officer to each batch of students before going on the district. As a rule, however, the students of hospitals with no midwifery ward have never seen women in labour before going on the district to attend them.

Every hospital has a regulation that the student is to be accompanied to the first case or the first two cases by the R.O.O., but this regulation cannot in all instances be carried out, and the student not infrequently goes to his first case alone. It is assumed that he needs no assistance after the first two cases in conducting a normal labour, but he is under instructions to report at once to the R.O.O. any abnormal conditions which he may discover. His ability to detect abnormal conditions is, however, very small from lack of training. At one hospital a trained midwife in the service of the hospital is also present at every labour, and gives the student assistance; as a rule the student conducts normal cases without any assistance, even in respect of the toilet of the infant. Abnormal conditions are frequently dealt with by the R.O.O. in the patient's home; practically all hospitals have a rule that serious complications, such as ante-partum hæmorrhage or eclampsia, should be at once transferred to the hospital, where they are admitted under the supervision, usually indirect, however, of the obstetric physicians. There the student is able to take part in their management, and to see any obstetric operations which are required.

The student continues to attend his district cases during the first seven to ten days after the puerperium, under the same instructions to report any abnormal conditions which may arise regarding either the mother or the child. It must be recollected that unless he has previously attended the midwifery ward the student has received no practical instruction whatever in the management of infants; as a rule his work is done without any systematic supervision during the puerperium.

In some hospitals the number of cases available in the district is insufficient to allow 20 for each student; a certain number of students from these hospitals are sent to the lying-in hospitals, where they can be "signed up" for 20 cases in 14 days (Queen Charlotte's), 21 days (York-road), or 14 days (City of London). In some instances the student goes for a fortnight to the Lying-in Hospital, and then serves for a fortnight on the district of his own hospital.

In the case of the *hospitals having a midwifery ward for students*, the conditions require separate notice. The number of beds in these midwifery wards varies from 8 to 24; the number of cases admitted per annum varies from 180 to 550 to 600; the number of cases admitted per student trained varies from 3 to 11 or 12. The number of cases actually delivered by medical students in the ward is limited, in all but one hospital, by the fact that, not being in residence in or near the hospital, they only attend the deliveries which occur in the daytime. The instruction is given in part by the visiting physicians, but mainly by the registrar or the resident officers. The period of attendance in the midwifery ward is four weeks, and the student is not permitted to begin attending cases in the district until he has conducted a certain number of deliveries in the ward and received a certain amount of practical instruction. After this he attends his district cases alone, as do the students of the other hospitals.

Maternity and infant-welfare centres.—These centres, where they exist, provide opportunities for instruction in the care of the nursing mother, in infant feeding, and in the general management of the infant during the first year of life. The midwifery department of a hospital ceases to be concerned with the average normal case in 10 to 14 days after delivery; the work of these centres is a continuation of the work of the obstetrician, and its utility from the point of view of preventive medicine is generally recognised as being very great. It is of the first importance that these centres should be made use of in training students in continuation of their midwifery work, yet only five hospitals have a maternity and infant-welfare centre in connexion with them. Others are soon to be started.

B.—*The Defects of the Present Methods of Teaching Midwifery.*

The *systematic* instruction given is, generally speaking, satisfactory, and is in the hands of the obstetric physicians. The *practical* instruction leaves very much to be desired, and in some respects merits emphatic condemnation. We desire, however, to acknowledge the great improvement which has followed the establishment of midwifery wards for the instruction of medical students. The change is of recent date and is at present operating in only four hospitals; but its great usefulness is apparent and will receive general acknowledgment. The case of the hospital having no midwifery ward for students is the least satisfactory; the additional experience which may be obtained when the student also goes to a lying-in hospital for a short time is most unsatisfactory. The following considerations must be borne in mind:—

(1) *The hospital without a students' midwifery ward.*—The grave defects of this system may be set out as follows:

(*a*) Students learn to deliver women only under conditions in which surgical cleanliness is extremely difficult to secure. Under a satisfactory system the same principle should be followed as obtains in general surgery—viz., they should be taught upon the highest plane of efficiency which it is possible to attain, not upon the lowest, which can be reached without unjustifiable risk to life. A not unfair analogy would be for surgeons to teach students the technique of abdominal operations under conditions where they would be deprived of adequate light, ventilation, and the means of cleanliness.

(*b*) Students who are taught thus, under makeshift conditions, will absorb the impression that careful and exact precautionary measures are unnecessary. The effect of such an impression upon their future work in private practice can only be disastrous, and may be related directly to the incidence of puerperal fever in the country as a whole.

(*c*) Unless complications occur in his district cases, he will never see the obstetric physicians dealing with labour at all; and even when patients are transferred to the hospital the control of the obstetric physician is often indirect, and is exerted through the registrar or R.O.O. who actually deal with the cases themselves after asking his advice. The student, therefore, learns extremely little of abnormal labour; he may not see a forceps delivery during his month, and in occasional instances may go up for his final examination without having seen this procedure except upon the dummy.

(*d*) It follows from (*c*) that the student learning clinical midwifery is completely out of touch with his senior teachers; he does not see them actually engaged in the work he is trying to learn, and never has the advantage of their supervision and guidance.

(*e*) That a student should conduct deliveries in the district is undoubtedly useful, for the single-handed conduct of cases of labour may be assumed to develop his sense of responsibility, a valuable aspect of his training as a doctor. But this should come *after* and not *before* he has been made acquainted with the nature of his task. In the case of the student of average ability, to thrust responsibility upon him before he has been taught his work, will be more likely to hinder than to help him in learning.

(*f*) Attendance upon 20 to 30 cases of midwifery ought to afford invaluable opportunities of instruction and experience in the management of the normal puerperium, of minor disorders of the puerperium, and of infant feeding. Under the district system these opportunities are completely wasted, owing to the total lack of systematic supervision of the students when at work.

(2) *The lying-in hospital.*—The great defect here is that no direct provision is made for the *instruction* of medical students at these hospitals.

They attend the practice of the hospital in order to be "signed up," but no one is responsible for teaching them. The visiting physicians pay regular visits to the lying-in wards, where they are followed by a mixed class of graduates, students, and pupil-midwives, to whom they give what instruction is possible in the circumstances upon the puerperium and the management of infants. They rarely, if ever, conduct a case of normal labour, and are seldom in the labour wards except for difficult cases which require their presence. "Waiting cases" which present abnormal conditions are usually seen by the visiting physicians, who may demonstrate them to the students; but under the rules of the hospital the visiting physicians do not undertake any responsibility for the instruction of medical students. It has been already stated that the student does not actually deliver all the patients he is certified to have "attended"; it suffices if he is present at the delivery as a spectator. The number he actually delivers is variable and depends upon the goodwill of the R.O.O. and the resident midwives, either of whom may supervise his work. Instruction of students is, however, no part of their duty to the hospital and they are under no obligation to take pains in giving it. Some students may be allowed by the R.O.O. to conduct a forceps delivery under supervision, but this depends entirely upon the goodwill of the R.O.O. himself.

(3) *The hospital with a students' midwifery ward.*—This system undoubtedly marks a great advance in the training of students, but certain defects are inherent in it. Only four hospitals have such a ward in actual working; its size varies from 8 to 24 beds. The greater number of cases admitted are normal cases. Students are attached to the ward, in all cases exclusively, for a period of four weeks. They come into close touch with the obstetric physicians, who demonstrate cases to them and give general clinical instruction on their regular visiting days. The women are delivered by the R.O.O. or the resident sister midwife, under both of whom the students work, and by whom they are personally instructed in the conduct of normal labour. The students are not in residence except in the case of one hospital, and, as a rule, only the daytime labours are seen by them. It must be pointed out, however, that the visiting physicians take little or no part in teaching the conduct of normal labour, that the more serious cases of abnormal labour are not all seen by them, and even when conducted under their supervision, they are not necessarily delivered by them.

The *small size* of the midwifery ward is one of its chief defects. It suffices to allow each student to conduct a small number of normal deliveries before commencing his work on the district; this number could with advantage be much increased. The more serious abnormal cases from the hospital district are sent in to the midwifery ward, but it is impossible for these wards to deal with large numbers of abnormal cases, and there is no doubt that the students' opportunities of seeing difficult labour dealt with are inadequate.

The *non-continuous* character of the student's attendance, in all but one hospital, is a grave disadvantage. A large proportion of all deliveries occur at night, when the student is not there to see them. Complicated cases may occur at any time, and from their nature the great majority must be dealt with promptly. As a rule, they cannot be left over until the hours of the student's attendance come round, and thus invaluable opportunities of instruction are lost. To tell the student all about a difficult case the day after it has been dealt with is not a satisfactory method of clinical instruction. The time the student devotes to the midwifery ward (four weeks) is quite inadequate, if his attendance is only in the day time, and even that may be broken up by other duties.

The bulk of the practical teaching in the midwifery wards is given by the registrar and the R.O.O., particularly in regard to the conduct of normal labour; whereas the student ought to be taught both normal and abnormal conditions by senior obstetric officers of greater experience and higher standing than the average registrar. The major part of the student's clinical teaching in *surgery* is given him by surgeons and assistant surgeons, and this is universally regarded as being necessary. It is equally necessary that he should be taught his clinical midwifery by men of similar standing. In the nature of midwifery work this would involve the presence in resident control of the midwifery ward of senior officers, who would be always available, would personally supervise the work of the labour wards, and would themselves deal with abnormal cases at whatever hour they might arise.

C.—*The Present System: Gynæcology.*

A certain small number of systematic lectures in gynæcology are given by the obstetric physicians either as a part of the course of midwifery or separately. As a rule the student clerks for one to two months in the gynæcological department; although the regulations of the majority of the examining bodies require him to spend three months at clinical gynæcology, the hospitals do not all enforce it. In some instances his gynæcological clerking is done in the same month as he attends his midwifery cases on the district. The number of gynæcological beds in the various hospitals varies from 11 to 34, the average being about 20. In the wards the clerk is taught by the registrar or the R.O.O. to take the history of a gynæcological case, and is usually taken over the physical examination by the same officer. He follows the obstetric physician in his rounds, and is present at the operations which take place during his clerkship. His attendance in the wards may be much restricted if he is at the same time doing his midwifery cases on the district. In the wards he gets certain opportunities of making pelvic examinations under anæsthesia, and of personally assisting at operations. The operations and the operation specimens are demonstrated more or less fully, according to the custom of each operator and the amount of work he may have to get through. In the case of hospitals with only 10 to 20 gynæcological beds the number and variety of cases seen in a month is necessarily very limited, and is, in fact, quite inadequate as a course of clinical training.

Among gynæcological out-patients, the student usually sees a large number of minor cases, and is allowed to examine a fair proportion of them. He needs close supervision and a good deal of assistance in learning to make the bi-manual examination, and in the case of a large out-patient clinic the number of cases which have to be seen precludes the out-patient physician from devoting close attention to the student. In a small clinic the number and variety of the cases seen by the student in one month is quite inadequate. As a rule, the out-patient physician is assisted by the R.O.O., but it is rare to find any system operating for the sifting of cases, so that those most suitable for teaching may be passed at once to the out-patient physician. Usually the R.O.O. sees all the old cases and the out-patient physician all the new ones irrespective of their clinical importance.

Deficiencies in gynæcological training.—It is in the clinical training of the students that defects are most apparent. These deficiencies can be traced mainly to two causes: (1) The very inadequate number of gynæcological beds in all the hospitals; (2) the very inadequate amount of time which the student devotes to the subject. With regard to the number of beds it must be recollected that midwifery and gynæcology together form one-third part of the final examination, and are associated on equal terms with medicine and with surgery. The combined number of gynæcological and midwifery beds available for teaching is less than one-third of the number allotted either to medicine or to surgery. This policy of cramping the work of the obstetric physician is due partly to the failure of colleagues to realise the importance of these subjects to the medical practitioner and to the community and partly to the relatively low level of the requirements of most of the examining bodies. In both medicine and surgery the student is obliged to clerk for six months, while to clinical midwifery and gynæcology combined he does not devote more than three months at most hospitals.

D.—*The Consequences of Defective Training in Midwifery and Gynæcology.*

(*a*) The training of medical students is a matter of the first importance to the State, for efficient doctors are necessary to the maintenance of the public health. In the early years of his private practice midwifery and the minor ailments of women and infants form a large proportion of the young doctor's work, and yet these are probably the subjects in which his practical training has been most deficient.

(*b*) Since the great majority of students learn to conduct labour only under conditions in which surgical cleanliness cannot be enforced, they carry with them into practice the impression (perhaps subconsciously) that surgical cleanliness is not of the same importance in midwifery as in surgery. The makeshift methods with which they begin their experience tend to become stereotyped in their minds, and the effect of this upon their work in private practice must be very bad.

(*c*) The bearing of this point upon the incidence of death from childbearing in the country cannot be overlooked. During the period 1891 to 1914 this death-rate of childbirth for Great Britain and Ireland was almost stationary, the fall being only from 5·8 to 5·08 per 1000 births. This can only be regarded as extremely unsatisfactory, for it shows that during a period in which surgical training made such rapid advances midwifery training made none. Indeed, in all divisions of the country except Ireland the death-rate actually rose in the quadrennium 1911–1914. The conclusion cannot be avoided that both medical students and midwives are being imperfectly trained.

(*d*) The student has been accustomed to pay only perfunctory attention to the puerperium, for he has been left largely to himself at this period while attending his cases on the district; he therefore cannot be expected to realise its importance from the point of view of the health and working efficiency of the mother.

(*e*) The average newly qualified doctor has had little or no clinical training in the management of the infant and usually leaves it entirely to the nurse. Even in the case of the well-to-do the nurse often regards the infant as her patient, and feeds it or doses it without reference to the medical attendant. Mothers also come to think that this is the proper arrangement and to prefer the advice of the nurse. There is no doubt that many infant lives are lost owing to the fact that medical students receive insufficient clinical training in this subject.

(*f*) It is the personal experience of all the members of your committee that medical practitioners do not consider it necessary to obtain the services of a specialist or of a hospital in the emergencies of midwifery to the same extent as they undoubtedly do in the case of general surgery. This is largely due to the fact that they have not, during their training, seen such cases dealt with by the senior obstetric officers in the way that they have seen serious surgical cases dealt with by surgeons. Their custom is to call in a neighbouring practitioner and to do the best they can.

(*g*) The lack of hospital accommodation for women in labour and the lack of public means of transporting patients to hospital tend to confirm the practitioner in this attitude.

(*h*) The close relation which subsists between bad midwifery and pelvic disease in women is well recognised. A sound practical training in the recognition and treatment of pelvic disease is as important as the midwifery training itself. Young medical practitioners are probably less able to recognise common forms of gynæcological disease than they are common forms of medical or surgical disease. The results are very serious in regard not only to the life, but also to the health, working efficiency, and subsequent capacity for child-bearing of the women of the country.

E.—*The Bases of an Efficient Training in Midwifery and Gynæcology.*

(1) Owing to their intimate relationships these subjects should be taught, as is the British practice, by the same teachers, and the training of students in them should run concurrently.

(2) Midwifery training should be extended in one direction (antenatally) so as to comprise a fuller study of the whole course and management of pregnancy, and in the other (post-natally) so as to comprise the management of the whole nursing period and the management of the infant.

(3) The management of labour should be taught as a surgical procedure; this can only be done in hospital, under surgical conditions, with adequate equipment, and a highly trained staff of teachers. Owing to the peculiar nature of the work the senior officers upon whom the ultimate responsibility rests should be resident in the hospital, or should be available at any time their presence may be required.

(4) There should be adequate hospital accommodation in all large centres of population to allow of all serious obstetric emergencies being immediately admitted for treatment; this is recognised as being necessary in respect of surgical conditions, and it is equally necessary in respect of midwifery.

(5) From (4) it follows that the number of beds available for cases of midwifery must be very largely increased, allowing due provision to be made for the emergencies which so frequently arise.

(6) Medical students and midwives cannot be suitably trained in the same institution unless in separate classes.

(7) The proportion of beds allotted to midwifery and gynæcology is quite inadequate to the importance of the subject from the point of view of the public health; the number should bear a definite proportion to the total number of beds in the hospital; at the present time the average proportion is less than one-twentieth of the total in the 12 teaching hospitals; this proportion should be increased to at least one-tenth. A considerable number of gynæcological cases are dealt with by the surgeons in the surgical wards, which are largely lost for teaching purposes.

(8) The requirements of the examining bodies in both subjects should be strengthened so as to enforce (*a*) an adequate period of clinical training during which the student should be allowed to undertake no other work; (*b*) the provision of suitably arranged and sufficiently large facilities for clinical work.

(9) The extent to which the student's training is influenced by the nature of the qualifying examination must not be overlooked, and the present system of examination in midwifery and gynæcology urgently needs amendment. The examination of the Conjoint Board, for example, is very unequal owing to the large number of examiners from different teaching hospitals in London and from provincial universities, who often set widely different standards. And the absence of a clinical examination in both subjects leads the student to neglect his clinical work and to underrate its importance.

The examining authorities should be urged, whenever it is possible, to recognise the principle that the student should be examined by his own teacher with a second examiner as assessor, and that clinical examinations should be accorded the same importance as in the case of medicine and surgery.

F.—*Sketch of a Satisfactory Scheme.*

(I.) There are two different lines upon which fully equipped departments, of adequate size, for the teaching of midwifery and gynæcology could be organised:—

(*a*) Certain of the larger teaching hospitals might provide for a great expansion of their existing midwifery wards, from which, with their associated gynæcological, pathological, and other services, a midwifery department could be formed capable of providing for the training, not only of their own students, but also, if necessary, of students from other hospitals where there is no midwifery ward in existence.

(*b*) New centres might be found in outlying districts where there is at present no adequate maternity service. These new centres, though not in proximity to existing teaching hospitals, might be affiliated to certain of them which were unable to develop fully equipped maternity departments of their own, and which might send their students to the new centre for training. These new centres could be made use of for training not only students but also post-graduates, and in addition they would afford much-needed facilities for research.

(II.) *Departments* developed out of existing maternity wards at a teaching hospital (Subsection I.*a*) ought to provide a minimum of 75 beds, of which 50 would be for midwifery and 25 for gynæcology. Of the midwifery beds a certain number would be allocated to ante-natal conditions and puerperal complications. "Departments" developed in connexion with the larger teaching hospitals, which have greater facilities for expansion, might exceed these figures if students from other hospitals were received in addition to their own.

In the opinion of the committee a midwifery department containing less than 50 beds cannot be satisfactory for the teaching of students, as it will not afford them an opportunity of seeing all the ordinary difficulties and complications of pregnancy and labour during the limited period of time in which they are attending the department. It would be impossible for every one of the existing teaching hospitals to supply such a large number of beds for midwifery. So it is obvious that under this scheme some form of concentration would be necessary—that is, that some of the hospitals should provide midwifery departments which would be attended by their own students and, in addition, by students from the hospitals which were unable to provide such departments.

(III.) Newly founded *centres* (Subsection I.*b*) would probably be made larger than the "departments" on account of the urgent public need which exists for increased hospital accommodation for midwifery cases. They could provide about 200 beds each, of which, roughly, 20 would be for ante-natal conditions, 100 for labour, 20 for infective cases (isolation), and 60 for gynæcological cases. The provision of a certain number of such *centres* as these in selected outlying districts would form a most valuable contribution to the provision of an efficient maternity service for London. It is obviously of great importance that full use for teaching purposes should be made of such new *centres* when they come into existence.

The provision of a proportion of gynæcological beds in the *centre* is an essential feature of the scheme. It would be needed to meet the medical requirements of the district, and, further, it would allow the student to do his practical work in the two subjects together and under the same teachers; knowledge of either subject is incomplete without the other, and the student learns them together much more readily than separately.

(IV.) The medical staff required to work the "centre" also involves a new departure. Reasons have been advanced for the view that a much larger proportion of the teaching in the conduct of normal and abnormal labour should be given by senior obstetric officers, than is the case at present. This involves senior officers being either in residence at the centre or on duty during certain definite hours of the day and night. Such services could not be required of them without payment upon an adequate scale. Next to them would be required assistants in residence, of the status of the present registrar or tutor, whose whole time would be required, and who also must be adequately paid.

(V.) "Departments" developing out of existing midwifery wards at teaching hospitals (Subsection II.*a*) would probably be best staffed as follows:—

(1) A staff of two or more *visiting obstetric physicians* (or surgeons) who would, in rotation, undertake the duties appertaining to the director or chief of the department, for definite periods as might be most suitable.

(2) A resident "*chef de clinique*," appointed for a term of years, who must be a whole-time officer, and who would have charge of the department under the visiting staff. His professional status should be above that of an obstetric registrar—i.e., comparable with that of a resident assistant surgeon or a resident assistant physician.

(3) One or two resident *senior assistants* of the status of the registrar, who would direct the students personally in their work in the labour wards, the lying-in-wards, and on the district, and a number of resident *assistants* (house surgeons). These would also be whole-time officers.

Departments such as these would probably eventually develop into "units" with professors of midwifery and gynæcology, on the lines of the units of medicine and surgery which are about to be founded. Such professors of midwifery and gynæcology should not be "whole-time" professors, but should remain in touch with consulting practice.

(VI.) New centres formed in outlying districts (Subsection II.*b*) would probably be best worked by:—

(1) A resident *director* or *superintendent*, who might be appointed for a term of, say, five to seven years. He would be of the status of an obstetric physician at the teaching hospital. He would be responsible for the control of the work of the institution generally, and would take a large share in operative work, in teaching, and in research. The director should not be a "whole-time" officer, but should remain in touch with consulting practice.

(2) One or more resident *assistant directors*.

(3) Working under (1) and (2) a sufficient number of resident *assistants* to direct the students personally in their work in the labour wards, the lying-in wards, the gynæcological wards, and in the district. They would also be responsible for the clinical pathology of the centre, and would carry out research under the supervision of the director and the assistant director.

These appointments when first instituted would afford an opportunity for the teaching hospitals affiliated to the centre to be represented upon its teaching staff, and thus keep the students in touch with their own hospital staff.

It must be borne in mind that outlying districts which are in need of a midwifery hospital service require general hospitals as well; these would, no doubt, eventually be established, and thus provide for the association of pathological and other services with the new centres.

(VII.) In the opinion of the committee the requirements of the students' training can only be completely met under the scheme of new "centres," on account of the necessity which has been already emphasised of the senior teachers taking a considerably larger part than at present in the work of clinical instruction. Under the alternative scheme of "departments" at existing teaching hospitals the senior teachers would, in effect, not take any larger part in teaching than they do now.

(VIII.) Students belonging to hospitals with a fully equipped midwifery department (Subsection I. *a*) should be attached to the department for a period of four months, during which their whole time would be devoted to midwifery and gynæcology, and they would be in residence for, at any rate, a part of the time. Students from other hospitals would probably come to the department for practical midwifery only; they would be in residence for at least one month. In the second month they would attend their cases on the district of their own hospital under the supervision of their own medical staff, and would, in addition, continue to attend the department for clinical teaching, operations, &c. These students would receive their gynæcological training at their own hospitals, as at present.

(IX.) The midwifery districts of the teaching hospitals would, therefore, be continued, for it is of great importance that the student should have experience of district work during the latter part of his training, as long as it is under proper supervision. In the case of certain hospitals the district could not provide sufficient cases to enable each student to attend the required number. Arrangements could, perhaps, be made for a proportion of the students from these hospitals to do their district work elsewhere—i.e., in the district of another hospital.

(X.) Each teaching hospital should provide means of properly supervising its students in their work on the district. Under the present system the assistant obstetric physician is in nominal charge of this work, with the assistance of the registrar and the R.O.O. The control of the assistant obstetric physician should be made effective under the rules of each hospital, and the duties of the registrar should include the instruction of each student in the management of his district cases during the puerperium.

(XI.) Students attending a new centre (Subsection I.*b*) would be attached to it for a period of four months, during which their whole time would be devoted to midwifery and gynæcology, and they would be in residence for, at any rate, a part of that time.

G.—*First Steps to be Taken.*

(I.) While the committee are of opinion that eventually the foundation of new "centres" will be necessary for the proper training of students in midwifery and gynæcology, it is recognised that it will probably be some time before such a scheme could be put into operation. The necessity of taking steps promptly to effect the most urgently needed improvements is, however, obvious, and the formation of "departments" at existing teaching hospitals (F, Subsection II.*a*) could be put into operation without prejudice to the later formation of new "centres." In this way the two schemes could be developed side by side, and there is no doubt that the one found by experience to be best suited to the special requirements of London would eventually prevail.

(II.) It is of great importance that a "department" of the size indicated, formed at a teaching hospital, should in addition to their own students receive a certain number of students from one or more hospitals which have no midwifery ward. If this plan were carried out the existing inequality of the training in practical midwifery in London which results from the absence of a midwifery ward in many teaching hospitals would be to a great extent obliterated, and the general level of midwifery training would be at once appreciably raised.

(III.) As hospitals without a fully equipped midwifery department would continue to train their own students in gynæcology as at present, an immediate increase in the number of gynæcological beds at these hospitals is urgently required for the reasons which have been already stated.

(IV.) The first steps to be taken would probably be to inquire into the following points:—

(*a*) The possibility of the hospital designated being able to allot the required number of beds to midwifery.

(*b*) The willingness of other hospitals to make use of the "department" for training their students.

(*c*) Suitable financial arrangements being made between the affiliated hospitals, assisted by a Government grant.

(V.) Another development which might be put into immediate operation is the much greater utilisation of ante-natal and infant-welfare clinics for the instruction of students.

(VI.) It is also very desirable that all teaching hospitals should, as far as possible, compel their students to give up a minimum of four months solely to midwifery and gynæcology, and the examining bodies should be moved to alter their requirements in this sense.

H.—*The Teaching of Graduates.*

Midwifery.

(1) There is no doubt that it is very desirable that provision should be made for the clinical instruction of graduates in midwifery; there is a considerable demand for it now, and this demand is likely to be greater in the future.

(2) The essential conditions for the practical instruction of graduates in midwifery are: (*a*) an institution able to receive large numbers of cases, and making special provision for difficult and operative labours; (*b*) resident teachers of status and experience.

(3) The case of the medical student is in our opinion more urgent than that of the graduate and should be dealt with first. When large central institutions on the lines indicated above have been set up there will be no difficulty, in addition to meeting the needs of the students, to provide the clinical material, the teachers, and the laboratory facilities which are requisite for the instruction of graduates.

(4) Under the conditions which exist at present it is practically impossible to organise post-graduate instruction upon satisfactory lines. Certain suggestions for improving the existing facilities at lying-in hospitals will be found in Appendix D.

Gynæcology.

(1) The abundant clinical material of the special hospitals for women is largely lost for teaching purposes under the present conditions. A certain number of clinical assistants (qualified) are usually attached to them who attend out-patients and operations, but there are no systematic arrangements for clinical teaching upon a considerable scale.

(2) These hospitals would be of invaluable service in providing clinical teaching for graduates, and this appears to be their proper educational sphere.

(3) The three principal hospitals (Chelsea Hospital for Women, Samaritan Free Hospital, Soho Hospital) should be affiliated, so that graduates taking a course would be entitled to follow the practice of all of them. In this way graduates taking a course of clinical gynæcology could be continuously employed in out-patient departments, wards, operating theatres, and laboratories.

(4) Courses of instruction lasting for six to eight weeks should be provided—viz., (*a*) clinical gynæcology; (*b*) operative gynæcology; (*c*) gynæcological pathology.

Clinical gynæcology.—Demonstrations on selected cases should be given in the in-patient and out-patient departments, and the senior and junior members of the staff should take part in the teaching in both departments. Facilities should be afforded to each graduate to acquire a knowledge of the bimanual methods of examination by repeated practice while the patient is anæsthetised; to acquire a knowledge of the instruments, appliances, &c., used in the practice of gynæcology. Case-taking cards should be provided in both in- and out-patient departments.

Gynæcological pathology.—Instructions should be given in (*a*) recent specimens, (*b*) microscopic preparation, (*c*) bacteriology, (*d*) specimens in the Museum of the Royal College of Surgeons.

(5) Advanced courses might be arranged for those who desire to specialise in gynæcology, and opportunities afforded them both in the wards and in the laboratory for research.

(6) Clinical assistantships might still be available for those who, having taken a post-graduate course, desire to continue their work at the hospital.

The report is signed by Dr. T. W. Eden (chairman of the committee), Dr. H. R. Andrews, Dr. G. F. Blacker, Dr. J. S. Fairbairn, Dr. F. J. McCann, and Mr. Gordon Ley (secretary).

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

METEOROLOGICAL OFFICE: ADVISORY COMMITTEE ON ATMOSPHERIC POLLUTION: SUMMARY OF REPORTS FOR THE MONTHS ENDING

Oct. 31st, 1918.

Place.	Rainfall in millimetres.	Metric tons of deposit per square kilometre. Insoluble matter. Tar.	Carbonaceous other than tar	Ash.	Soluble matter. Loss on ignition.	Ash.	Total solids.	Included in soluble matter. Sulphate as (SO_3).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND.										
London—										
Meteorological Office[1]	—	—	—	—	—	—	—	—	—	—
Embankment Gardens	22	0·05	1·44	2·29	7·21	15·57	26·57	6·39	1·91	0·11
Finsbury Park ...	65	0·10	1·06	2·77	4·45	9·07	17·45	5·04	4.00	0·13
Ravenscourt Park	28	0·02	0·55	0·67	1·41	3·44	6·09	1·28	0·66	0·09
Southwark Park	31	0·05	1·32	2·74	3·51	5·70	13·32	3·86	0·61	0·30
Victoria Park ...	30	Tr.	0·66	2·05	1·14	3·45	7·29	1·73	0·35	0·07
Wandsworth Com.*	—	—	—	—	—	—	—	—	—	—
Golden Lane ...	31	0·04	2·55	3·80	0·99	3·84	11·23	1·51	0·55	0·12
Malvern*	—	—	—	—	—	—	—	—	—	—
Manchester—										
Whitworth Street (garden)	25	—	—	—	—	—	10·40	—	—	—
,, (roof of College)	27	—	—	—	—	—	11·30	—	—	—
Newcastle-on-Tyne	55	0·12	4·36	5·91	1·85	2·94	15·19	1·61	0·39	0·18
Rochdale	—	—	—	—	—	—	23·16	—	—	—
St. Helens	72	0·14	2·87	5·34	2·88	6·12	17·36	3·32	1·82	0·06
Southport—										
Hesketh Park ...	83	0·02	0·19	0·23	0·62	2·83	3·89	0·93	0·79	0·01
Woodvale Moss...	61	—	—	—	—	—	2·73	—	—	—
SCOTLAND.										
Coatbridge	117	0·11	1·76	4·70	3·52	7·46	17·55	3·97	1·29	0·35
Glasgow—										
Alexandra Park...	89	0·09	2·66	4·92	2·29	4·65	14·61	2·64	0·28	0·20
BellahoustonPark*	—	—	—	—	—	—	—	—	—	—
Blythswood-sq. ...	129	0·16	2·58	4·28	1·76	9·14	17·92	3·49	0·38	0·34
Botanic Gardens[2]	127	0·14	2·07	4·98	11·88	15·19	34·26	6·91	1·59	0·25
Richmond Park*	—	—	—	—	—	—	—	—	—	—
Ruchill Park ...	133	0·15	1·75	2·93	3·20	6·80	14·83	3·89	0·35	0·28
South Side Park.	131	0·12	2·27	4·84	3·62	8·94	19 79	3·20	0·42	0·24
Tollcross Park* ...	—	—	—	—	—	—	—	—	—	—
Victoria Park* ...	—	—	—	—	—	—	—	—	—	—

Nov. 30th, 1918.

Place.	Rainfall in millimetres.	Metric tons of deposit per square kilometre. Insoluble matter. Tar.	Carbonaceous other than tar	Ash.	Soluble matter. Loss on ignition.	Ash.	Total solids.	Included in soluble matter. Sulphate as (SO_3).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND.										
London—										
Meteorological Office[1]	—	—	—	—	—	—	—	—	—	—
Embankment Gardens	28	0·09	1·21	1·69	3·45	10·92	17·36	5·27	1·02	0·22
Finsbury Park ...	52	0·08	1·56	5·41	4·69	7·70	19·44	4·83	1·20	0·08
Ravenscourt Park	54	0·03	1·24	2·24	3·92	5·63	13·06	3·12	0·74	0·12
Southwark Park...	50	0·07	1·58	2·96	5·87	11·22	21·68	7·25	0·99	0·28
Victoria Park ...	40	0·01	0·97	2·50	2·37	6·92	12·78	3·63	0·54	0·10
Wandsworth Com.	19	0·00	0·01	0·15	0 52	1·77	2·46	0·87	0·18	0·04
Golden Lane ...	50	0·07	3·63	4·37	1·40	5·38	14·84	2 21	0·76	0·18
Malvern	39	Nil	0·33	1·26	0·61	2·24	4·55	0·90	0·23	0·01
Manchester—										
Whitworth Street (garden)	38	—	—	—	—	—	15·80	—	—	—
,, (roof of College)	49	—	—	—	—	—	15·70	—	—	—
Newcastle-on-Tyne	39	0·10	3·16	9·05	1·79	4·42	18·51	2·05	0·42	0·09
Rochdale	—	—	—	—	—	—	23·16	—	—	—
St. Helens	38	0·09	1·58	2·02	3·22	10·33	17·25	4·43	2·46	0·04
Southport—										
Hesketh Park ...	52	0·07	1·95	5·42	1·29	4·60	13·33	1·56	0·62	0·01
Woodvale Moss...	35	—	—	—	—	—	5·73	—	—	—
SCOTLAND.										
Coatbridge	83	0·16	3·80	10·20	3·47	6·80	24·43	4·93	0·76	0·22
Glasgow—										
Alexandra Park...	75	0·11	1·56	4·24	3·31	6·90	16·12	2·59	0·57	0·12
BellahoustonPark*	—	—	—	—	—	—	—	—	—	—
Blythswood-sq. ...	96	0·19	1·80	5·25	1·95	5·85	15·04	4·18	0·69	0·19
Botanic Gardens	111	0·14	2·26	4·16	4·95	9·04	20·55	5·80	0·??	0·20
Richmond Park*	—	—	—	—	—	—	—	—	—	—
Ruchill Park ...	108	0·14	1·60	3 15	2·53	5·40	12·82	3·71	0·65	0·14
South Side Park..	92	0·09	1·62	2·48	3·15	5·33	12·67	3·09	0·63	0·21
Tollcross Park* ...	—	—	—	—	—	—	—	—	—	—
Victoria Park* ...	—	—	—	—	—	—	—	—	—	—

* No returns. [1] Bottles overflowed. [2] The water was dark violet in colour. Tr. = trace.

"Tar" includes all matter insoluble in water but soluble in CS_2. "Carbonaceous" includes all combustible matter insoluble in water and in CS_2. "Insoluble ash" includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: (*a*) Approx. 9 lb. per acre; (*b*) 2·56 English tons per sq. mile; (*c*) 1 g. per sq. metre; (*d*) 1/1000 mm. of rainfall.

The personnel of public health authorities concerned in the supervision of these examinations and of the analytical work involved remains the same as published in previous tables. The analyses of the rain and deposit caught in the gauge at the Meteorological Office are made in THE LANCET Laboratory.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

A MEETING of the Executive Committee of the Belgian Doctors' and Pharmacists' Relief Fund was held on Thursday, July 31st, at the offices of THE LANCET, when the following final balance-sheet was presented by Dr. Des Vœux, the honorary treasurer:—

BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

Treasurer's Cash Statement from Commencement to Close of Fund, July 24th, 1919.

	£	s.	d.		£	s.	d.
Donations and subscriptions	25,790	11	6	Relief	25,766	4	11
Interest received ...	1,143	12	7	Loans not repaid ...	97	8	0
				Drugs	250	16	8
				Clothes	344	17	0
				Auditors' fees	16	16	0
				Printing and stationery	199	14	3
				Postages and sundry expenses...	46	19	2
				Balance for final distribution...	211	8	1
	26,934	4	1		26,934	4	1

We have examined the above account with the books and vouchers of the Fund and certify it to be correct according to the books. In our opinion the receipts and payments have been fully recorded, and we have compared the receipts with the published acknowledgments and have had certificates of the balance produced to us from time to time. The above account incorporates the periodical accounts which we have previously certified.

CREWDSON, YOUATT, AND HOWARD, Chartered Accountants.

70A, Basinghall-street, London, E.C. 2, 24th July, 1919.

It will be seen that the Committee, by judicious investment and husbanding of their resources, were enabled to maintain the Fund in its charitable capacity while actually disbursing £800 more than was received from subscribers.

The Committee decided to pass no resolution at the time with regard to the disposal of the small balance remaining in the treasurer's hands, as certain expenses of printing and publication might yet have to be incurred.

Dr. Squire Sprigge, the honorary secretary, offered to keep the papers and books having reference to the Fund at the offices of THE LANCET for the present.

THE POSITION AND PAYMENT OF THE PENSIONS BOARDS:

DEPUTATION TO THE MINISTRY OF PENSIONS.

As will have been made clear by communications to our correspondence columns for some time past, medical men serving on Pensions Boards are not altogether satisfied with the conditions of service and with the remuneration offered. On Sept. 4th a deputation from the British Medical Association waited on the Minister of Pensions at Westminster House to bring these matters before his notice. The deputation included the responsible officers of the Association, and was received by Sir L. Worthington Evans, with whom were Lieut.-Colonel A. L. Webb, Dr. R. Cunyngham Brown, and Mr. J. F. Christie.

Dr. T. W. H. GARSTANG, as spokesman of the deputation, said that there were six main points which it had been decided to bring to the notice of the Minister. These were:—

1. That the fees for doctors attending boards under the Ministry of Pensions should be raised from the present standard of 1 guinea to 2 guineas. 2. That the specialists' fee be advanced pro rata. 3. That the number of cases to be seen in an individual session should not exceed eight. 4. That the length of the session should not exceed 2½ hours. 5. That payment to doctors attending on these boards be made more promptly than at present. 6. What was the policy of the Ministry as regards throwing open the posts of medical referees to men who had returned from the Services, and when was this policy likely to be carried out?

Dr. Garstang and several other members of the deputation explained the general feeling of the medical profession that the 1 guinea fee was inadequate, and that it had only been accepted as a temporary measure, owing to the anxiety of the profession to help the country during the war. Now that the war was over the Ministry could not expect to have this work done at an admittedly inadequate rate and still retain a choice of the best men. Chapter and verse were given for the other grievances alleged.

Sir L. WORTHINGTON EVANS, while assuring the deputation of the careful consideration of all their points, indicated that the suggested increase in the sessional fee to 2 guineas would probably cost the country over £1,000,000 a year—an increase in expenditure not to be lightly undertaken. As regards the number of cases examined in a session, it was found that the average had for some time been 7·2 cases, and latterly even less, and he thought that if that was so it should be considered as having met the point submitted. He was entirely in agreement as to the length of the session being 2½ hours, though he pointed out that there would every now and then be occasions on which, for the sake of dealing with a case which might have come some distance, the members of the board should be willing to extend the time of the session a little. He considered that there must be some give and take in the matter. He offerred to look into the question of prompt payment, as, in his opinion, there should be no arrears such as had been mentioned. As regards the posts of medical referees, the District Commissioners had been instructed some time back that, as soon as they knew that practically all the doctors had returned who were likely to apply, the posts should be thrown open, preference being given in the following order:—

(*a*) Service overseas.
(*b*) Service in this country.
(*c*) Men who had already held the posts.

Action, he added, had been somewhat delayed owing to the rearrangement of the administrative areas of the Ministry, but in Scotland this was now complete, and the procedure mentioned would be put into operation almost at once; Wales would shortly follow suit. Similar action would be taken in other districts as soon as the District Commissioners reported that the bulk of the men had returned.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Monument to Medical Men Killed during the War.

A PROPOSAL has just been made to commemorate by a monument those medical men who have been killed by enemy action. M. Landouzy, the dean of the Paris Faculty of Medicine, has had their names engraved on a tablet on the walls of the great hall of the faculty since 1915. A form of monument had actually been proposed, consisting of names engraved on a wall, framed by plaques of mosaic, and surrounding a statue representing military courage. Since then, however, the number of victims has increased considerably. The French Medical Corps consider that the monument should be proportionate to the magnitude of the sacrifice and the number of the heroes. The idea is to honour the dead not only of Paris but of the whole of France, and new projects are on foot. One suggestion was the erection of a monument on the Boulevard St. Germain, in front of the entrance to the Faculty of Medicine, but this was thought to be lacking in originality and possibly in discretion. Up to the present nothing has been decided except the main principle of opening a subscription list among medical men in France, and including also old students of French universities now living abroad. The scheme most likely to be adopted is that supported by the present dean of the faculty, Professor Roger, which comprises the rebuilding of the old eighteenth-century amphitheatre of the School of Surgery on a more suitable site near the faculty. This old building is doomed to destruction, and the beauty of its architecture would justify its reconstruction in the form of a small temple, with marble slabs on which could be engraved the names of medical men who had fallen in the service of their country.

Influence of Orientation on the Physiology of Man and Animals.

A curious communication by M. Jules Regnault to the French Society of Comparative Pathology again brings up the question of the effect of the earth's magnetism on the physiology of living animals. Some such influence has been suspected from the earliest times. In 1845 Reichenbach observed that certain people experience real discomfort when facing east, even when unaware of their position. During the last two years M. Regnault, following up

the experiments of Abrams, has convinced himself that if, after having percussed out liver and heart with the subject facing west, the observer repeats the percussion with the subject facing north, east, or south, the area of dullness is found to be perceptibly smaller. Other experiments show that visceral reflexes react most strongly to electro-magnetic or electric stimuli when the subject faces west. These facts correspond, moreover, with those recorded by M. Raphael Dubois on the orientation of development in bacterial colonies.

Foreign Doctors Practising in France.

This question is causing some perturbation among French doctors who return from the war to find their practice absorbed by foreign doctors. These latter are still present in large numbers, especially in Paris and the big towns. The situation was tolerated during the war because the civil population was really short of medical aid; moreover, the intrusion of some of the foreigners was condoned because of services rendered by them to wounded in hospitals. Now, however, the medical societies are moving in the matter and are agitating for the return to the normal interpretation of the laws regulating medical practice in France and requiring the possession of a State diploma as distinguished from that of a university diploma.[1] Many petitions have been sent to the Government by medical men with Spanish or South American or other degrees, claiming exemption from these laws on the grounds of service rendered during the war. On the representation of the Paris medical societies all except 12 of these applications have been refused. The exceptions for the most part have been made for Canadian medical officers of French origin. In the *Bulletin des Syndicats* M. le Filliâtre approves of this exception, and even suggests that it may be extended so as to allow all Canadian doctors to practise in France, assuming that French doctors are granted a reciprocal concession in Canada.

Sept. 8th.

[1] THE LANCET, 1919, i., 477.

URBAN VITAL STATISTICS.

(Week ended Sept. 6th, 1919.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at 16,500,000 persons, the annual rate of mortality, which had been 10·0 in each of the three preceding weeks, rose to 10·7 per 1000. In London, with a population slightly exceeding 4,000,000 persons, the annual rate was 10·5, and was 0·9 per 1000 above that in the preceding week, while among the remaining towns the rates ranged from 4·0 in Swindon, 4·5 in Acton, 4·6 in Enfield, and 4·9 in Coventry, to 14·8 in Plymouth, 14·9 in Gateshead, 17·1 in West Bromwich, and 20·1 in Middlesbrough. The principal epidemic diseases caused 345 deaths, which corresponded to a rate of 1·1 per 1000, and included 251 from infantile diarrhœa, 31 from measles, 30 from diphtheria, 16 from whooping-cough, 13 from scarlet fever, and 4 from enteric fever. Measles caused a death-rate of 1·2 in Newcastle-on-Tyne, 1·3 in Barrow-in-Furness, and 2·2 in Gateshead. There were 1454 cases of scarlet fever and 1006 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 1421 and 1004 respectively at the end of the previous week. The causes of 16 deaths in the 96 towns were uncertified, of which 3 were registered in Liverpool and 3 in Gateshead.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2,500,000 persons, the annual rate of mortality, which had been 9·9, 10·7, and 10·9 in the three preceding weeks, fell again to 10·8 per 1000. The 223 deaths in Glasgow corresponded to an annual rate of 10·4, and included 18 from infantile diarrhœa, 4 from whooping-cough, 3 from measles, and 1 from diphtheria. The 78 deaths in Edinburgh were equal to a rate of 12·1, and included 2 each from infantile diarrhœa, scarlet fever, and diphtheria, and 1 from measles.

Irish Towns.—The 153 deaths in Dublin corresponded to an annual rate of 19·7, and included 24 from infantile diarrhœa, and 1 each from enteric fever and measles. The 112 deaths in Belfast were equal to a rate of 14·6, and included 12 from infantile diarrhœa, 2 from scarlet fever, and 1 each from enteric fever and diphtheria.

THE King of the Belgians has been pleased to grant the Médaille du Roi Albert to the following medical men for medical services rendered to Belgian refugees:—

Sir Rickman J. Godlee, Bart., K.C.V.O., Sir Frederick Taylor, Bart., Dr. C. St. Aubyn Farrer, Dr. S. Squire Sprigge, Dr. Chittenden Bridges, Dr. Neville Hart, Dr. J. H. Philpot, Dr. W. E. Robinson, Dr. Arthur C. Roper, Dr. R. M. H. Randell, and Dr. L. Vintras.

ROYAL INSTITUTE OF PUBLIC HEALTH: TUBERCULOSIS DEPARTMENT.—A course of lectures for candidates desirous of obtaining positions as tuberculosis officers, for general practitioners and others, will be given in October, November, and December, on successive Thursdays at 5 P.M., beginning Oct. 9th, at the Institute, 37, Russell-square, London, W.C.1. Further particulars can be obtained from the secretaries. The individual lectures will be announced in the Medical Diary.

Obituary.

THOMAS PICKERING PICK, F.R.C.S.,

LATE VICE-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; INSPECTOR OF ANATOMY FOR ENGLAND AND WALES; CONSULTING SURGEON TO ST. GEORGE'S HOSPITAL.

WE regret to announce the death, which occurred at Great Bookham, Surrey, on Saturday last, of Mr. Thomas Pickering Pick, the well-known surgeon and anatomist, whose connexion with the Royal College of Surgeons of England for so many years as an examiner made him a familiar figure in educational circles.

A Liverpool man, he came to St. George's Hospital in the days when Prescott Hewett, Timothy Holmes, George Pollock, and the two Lees adorned the staff, and obtained his first diploma in 1862. He held the junior appointments at the hospital, proceeding to the Fellowship of the Royal College of Surgeons of England in 1866. In 1869 he was elected assistant surgeon to the hospital, having previously been an extremely successful demonstrator of anatomy. Indeed, it is as a teacher of anatomy that Pick is always recalled to the memory of his pupils. As a lecturer on his subject he was rapid and correct, but not very inspiring, for he followed the lines of Gray's Anatomy so closely that he was popularly reported among the students to know that elaborate treatise by heart; he was, of course, its most painstaking and capable editor for many years. But as a demonstrator Pick was thoroughly in his element, and he went on demonstrating in an informal way many years after he had become the lecturer on the subject. In talking to a class of students he made the dry bones live, and showed the relations of a dissection in a manner which made the topography of the region for ever a part of the pupil's personal knowledge. For many years he was examiner in anatomy at the Royal College of Surgeons of England, where a dignified presence and a courteous manner concealed to some extent from the students the fact that his standard of exact anatomical knowledge was a very high one. He was possibly responsible for rejections which the disappointed candidate put down to examiners of a less agreeable address. He was at the time of his death Inspector of Anatomy for England and Wales.

In 1879 he became full surgeon to the hospital. He hardly made the same mark as a surgeon or lecturer on surgery that he had made as an anatomist, but his date was decidedly a difficult one. The theory of antiseptics was universally accepted, but only after discussions in which many of Pick's immediate superiors were not found on the progressive side; while the technique of what in the early eighties was still regarded as a completely new thing, called for much perfecting. Pick was not quite flexible enough to assimilate the Listerian doctrine, nor had he a sufficiently scientific outlook to enable him to see its tremendous promises. He remained the absolutely capable surgeon of his time, conforming to the antiseptic creed, but unable to forget that only a few years ago he had passed successfully tests in his professional subjects without requiring any knowledge of germ influence. He wrote, however, a good little treatise on fractures and dislocations, exclusive of fractures of the skull, as well as a treatise on surgery for practitioners. Each book was the outcome of personal experience, as well as a record of the principles of surgery as he had learnt them and practised them. He also edited Holmes's "Principles and Practice of Surgery," which was for many years one of the most popular manuals with English and American students. The handbook, however, was not kept up to date, and, indeed, the years when Pick was its editor were so marked with surgical developments that the work would have required almost annual re-issue if it was not to fall behind, as well as steady collaboration with younger men.

Pick's connexion with the Royal College of Surgeons of England was a long and honourable one, though he failed to be elected President. Appointed to the Board of Examiners in Anatomy and Physiology in 1876, he continued to be a member of the Court of Examiners until 1894. In this year, as Hunterian Professor, he delivered at the College an interesting series of lectures on Diseases of the Ends of the Long Bones in Children, which were published in these columns, and display their author as a sound surgeon

with a great knowledge of pediatrics. In 1898 he delivered the Bradshaw lecture, taking as his subject the Union of Wounds, and in 1903 he became Vice-President of the College. No doubt the failure to be elected President of the Corporation for which he had worked so long and loyally was a great disappointment to him.

ALEXANDER MACALISTER, M.A., M.D. CAMB., M.D., D.SC. DUB., LL.D. GLASG., MONTREAL, & EDIN., F.R.S.,

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF CAMBRIDGE.

BY the death of Alexander Macalister Cambridge loses one of her most ardent spirits and devoted servants, for though he had been educated elsewhere and had made his reputation before he migrated, no one of her sons was more loyal than was Macalister to the home of his adoption, or brought to bear on the duties of the professoriate a wider and riper experience of men and affairs. Looking back on the many and prominent parts he played, it can be realised how profound and beneficial has been his influence in the moulding of the character and work of his pupils.

Alexander Macalister was born in Dublin in 1844, the second son of Robert Macalister, and grandson, on his mother's side, of Colonel James Boyle of Dungiven. Educated at Trinity College, Dublin, he took his first medical qualification in 1862, and became in succession demonstrator of anatomy at the College of Surgeons, and professor of zoology, and then of anatomy and chirurgery in the University of Dublin. During this period he published an introduction to "Animal Morphology" (1876) and the "Morphology of Vertebrate Animals" (1878), and entered very fully into the life of the University, becoming a member of the Senate.

Macalister came to Cambridge in 1883 in that great period of evolution—almost of revolution—inaugurated by Coutts-Trotter, Humphry, George Paget, Michael Foster, and Latham, their survivor—men who, though not always pulling together, launched a new and vigorous medical school on the main stream of comparative anatomy, embryology, and physiology. Succeeding Sir George Humphry, Macalister had assigned to him the task of reorganising the work of the department of anatomy and of remodelling the teaching of his subject. How far he succeeded in adapting modern scientific teaching and methods to the requirements of the university is now a matter of history; for though it is sometimes maintained that his teaching was not sufficiently "surgical" to meet the requirements of the student of medicine, he built up a department that, ample enough at the time it was planned, is already inadequate to the demands made upon its resources and accommodation. It may be that if the passing of professional examinations outside the university by his pupils be made the stand of his success it was not so complete as was that of some, but if the thorough grounding of men in the principles of anatomy be taken as the test, his was the more solid and lasting education. Macalister's exceptional powers and abilities could never have found sufficient outlet in any single branch of anatomical investigation and teaching; archæology, craniology, and comparative anatomy all claimed a share of his energies, his attention to detail and marvellous thoroughness ensuring the success of his researches in all these fields, whilst the same attention to detail, the wealth of illustration he always had at command, his directness and independence of thought, combined with his devotion to the interests of his pupils, rendered his teaching not instructive merely but intensely stimulating and highly suggestive. Only those who know how willingly and lavishly he gave of his time and strength to the advancement of his subject and in the training of those working under him on broad scientific lines can have any idea of the success of his teaching, and how sorely colleagues and students, young and old, will miss the quiet persuasive manner, calm, well-balanced judgment, wide, almost encyclopædic, but profound, knowledge, and dry humour that characterised his dealings with them. His deep religious feeling and acute moral sense account for the keen interest he took in missionary work and the call to which he responded so joyously to visit the Far East, there to advise, help, and encourage those labouring in the China mission-field. One of the most highly equipped of our intellectuals he was modesty and humility personified in his respect for the opinions of others and in his attitude towards religion, which with him was no superficial thing, but was woven into the very web of his being, animating, guiding, and controlling his whole scheme of life.

One of his old demonstrators (E. R. T. C.) writes: "Macalister was an outstanding example of a man officially associated with the exposition of one subject (human anatomy), but capable, in virtue both of his intellectual powers and actual knowledge, of assuming an equally eminent position to any of several other spheres of learning (zoology, philosophy, archæology). From all these provinces of thought Macalister drew deeply wherewith to enrich, to exemplify, and to integrate his teaching of human anatomy. His draughtsmanship was inimitable, and his executancy as a dissector that of a master craftsman, most excellent to witness. Many old Cambridge students will regretfully miss the kindly reminiscent welcome which was theirs when, on rare visits, they looked in at 'the Rooms.'"

Professor Macalister married a daughter of James Stewart, of Perth, who predeceased him. He leaves two daughters, one of whom is the wife of Sir Donald MacAlister, and a son, Dr. R. A. S. Macalister, who is professor of Celtic archæology in Dublin.

G. S. W.

ARCHIBALD HENRY HOGARTH, M.A., M.D. OXON., D.P.H.,

MEDICAL OFFICER OF HEALTH FOR BUCKINGHAMSHIRE.

THE death of Dr. A. H. Hogarth at Quainton on Sept. 5th, in his 42nd year, leaves a gap in the Public Health Service which it will be difficult to fill.

Archibald Henry Hogarth was educated at Westminster School and Christ Church, Oxford, where he graduated in 1901. Going on to St. Bartholomew's Hospital, he obtained the Conjoint qualification in 1903, and the M.B., B.Ch. Oxon. in the following year. He then acted for some time as assistant medical officer to the Port of London, where the housing problems could hardly fail to arrest the attention of a man of his bent, and his first considerable contributions to social medicine were in the form of comprehensive reports to the Mansion House Council on Health and Housing, to which for some time he acted as secretary. Leaving the Port and its sanitary problems to join the educational staff of the London County Council, Hogarth met the second great pre-occupation of his busy life, and set to work to establish legislation on school hygiene, his pioneer book on "Medical Inspection of Schools" (1909), which had a wide circulation, doing much to form public opinion. He then became the first medical officer of health for the county of Buckingham, where he had special care for all health matters throughout the countryside, particularly in attention to dental care for children, to infancy and maternity nursing, and later to schemes for venereal disease control.

Whilst an Oxford undergraduate Hogarth served through the Boer War with his regiment, the Queen's Own Oxfordshire Hussars, and gained the D.C.M. On the outbreak of the recent war he rejoined his regiment and went to France as regimental surgeon, and after the armistice he was again sent out, this time by the Air Ministry, on a special mission to the Eastern Mediterranean, where he worked among the influenza-stricken camps in the Levant. On his return voyage an attack of Vincent's angina lowered a constitution at no time robust, and he never regained his strength.

Hogarth was a tremendous worker and inspired with something of his own zeal those who worked with him. No one who saw the organisation of public health work in Buckinghamshire could have guessed that its organiser was living in London and riding most of his old hobbies there. Whatever he was at, he collected his information and examined questions with thorough and scientific method; he had a great contempt for all shams or pretence, and, drawing his own conclusions, went forward in a strenuous and impetuous way. He thus accomplished much and always, whether in peace or war, fought the good fight. His writings resembled his actions, and from the time when he edited his hospital journal to his latest works on administrative health problems, the same eager note was characteristic of them and a freshness which his official position did nothing to spoil.

Of Hogarth's attitude to public health administration something should be said, for he breathed a spirit in which generous rivalry flourished while controversy faded. A whole-time officer himself, he fully recognised the claims of part-time service. He saw that reconstruction of medical work

in rural areas must be to a large extent organised on a part-time basis. The likely solution of efficient rural hygiene was not to him the parcelling out of the country into areas conveniently worked by whole-time officers on Whitehall lines, but rather a happy combination of part-time medical service under local sanitary committees, with administrative control by whole-time county council officials. In a memorandum which he drew up for the Labour Party's Advisory Committee on Public Health, he proposed the delegation by county and county borough councils of their powers and duties to six statutory committees, dealing respectively with asylums and mental deficiency; sanitation and housing; maternity and child welfare; industry, social welfare, and pensions; sanatoriums and hospitals; insurance and domiciliary treatment; each with the duty laid upon it of appointing an independent and responsible whole-time medical officer. It is lamentable that death should have prevented him seeing the further working-out of this attractive scheme in his own county, where already the Public Health and Insurance Committees were acting in complete unison.

Dr. Hogarth married Margaret MacDonald, M.B. Aberd., formerly London County Council medical inspector of schools, and leaves one son.

FREDERICK WALTER LOWNDES, M.R.C.S. ENG., L.S.A.,
CONSULTING SURGEON, LIVERPOOL LOCK HOSPITAL.

WE regret to announce the death of Mr. Frederick Walter Lowndes at the advanced age of 81. Born in Liverpool, where his family had for many years held a prominent position, Lowndes spent his whole life in the city of his birth, working hard there as doctor, philanthropist, and official. He did not intend in the first instance to adopt a medical career, but at the age of 23 he gave up a clerkship in a commercial house and went to Edinburgh to study what he rightly felt to be his vocation. In 1865, having obtained his qualifications, he returned to his native city to practise, and during the greater part of his early career he was frankly a poor man's doctor. The experience which he thus gained, as well as the insight which he obtained of the exact way in which the poor live, made him a zealous worker for all medical charities, and especially was he one of the earliest champions of the Hospital Sunday Fund. In this connexion he became the close ally of Dr. James Wakley, at that time Editor of THE LANCET and one of the founders of the Fund, and the result of their meeting was that Lowndes became for a long period of years a member of the editorial staff of this paper. In our columns and in those of the *Liverpool Courier* he wrote many forcible articles on the position of the voluntary hospitals, and the need for concerted effort among the public in support of these charities unless their voluntary character was to be exchanged for the position of the rate-aided institutions.

Other questions of a medico-public nature in which he was particularly interested were burial reform and the medical conduct of inquests. A pamphlet which he wrote setting out the reasons why the office of coroner should be held by a member of the medical profession ran through several editions, and is an admirable piece of pleading. But Lowndes was not a bigot in his views. He held that the appointment of coroner rightly belonged to his profession because the medical element in the evidence, so frequently the most important one, was very hard for a layman to explain to a lay jury; but he always granted that the lawyer's method of procedure might smooth the course of justice. And he had considerable legal knowledge. He was for many years medical officer to the Liverpool Constabulary, gave evidence in various important trials, and had an intimate acquaintance with criminology. He was a walking encyclopædia of information concerning famous cases.

DR. G. A. BATCHELOR, OF PRETORIA.—Dr. George Arthur Batchelor, Government district surgeon, of Rayton, Transvaal, who recently died at Pretoria Hospital, was born in India 64 years ago. He studied medicine at Aberdeen and the London Hospital, taking the M.R.C.S. in 1877, the M.B., C.M. Aberd. in 1879, and M.D. in 1895. He also took a D.P.H. and was awarded the M.D. Cape University. Before settling in the Transvaal he practised for a time at Cradock, Burghersdorp, Aliwal North, and Sea Point, in Cape Colony. He leaves a son of the same name in practice at Dogies, Transvaal.

Correspondence.

"Audi alteram partem."

THE UNIFICATION OF THE ARMY MEDICAL SERVICE AND ITS RELATION TO "TEAM PRACTICE" IN CIVIL LIFE.

To the Editor of THE LANCET.

SIR,—When I entered the A.M.S. some 53 years ago it represented individual and personal practice in a very definite way, and "team practice," as the coöperation of medical men is now called, was practically unknown. The unification of the A.M.S., which I helped to achieve, is a definite model to-day of "team practice," but no doubt much remains to be done to tighten the bonds of the unification idea. Thirty years of stress and strain will pave the way to better conditions, and in 1949 the civil medical profession will have taken definite form as a "team" organisation. To-day we have made the physician a tradesman selling cures; in 1949 he will be a scientific official guarding life. Army medical unification was not achieved even in its present incomplete condition without personal discomfort and at times actual suffering, hence the need of care and anxious study and investigation of proposed schemes of medical reform.

The primary function of the State in helping on medical unity will be the provision of increased local educational facilities, brought to the very thresholds of the medical men of the new era. Large sums of money will be needed to achieve this end, and not a farthing of the money will go to the individual medical man as a bribe or *personal* benefit. A central library, a central laboratory, facilities to spread broadcast the diplomas in public health, and leave of absence for rest and leisure guaranteed by the State, together with sick leave with State pay in case of illness—by these tempting boons we may draw into "union" the highly individualised medical profession of to-day. Grants in aid for retiring pensions will gradually creep in, and age retirement with pension may follow on our Army lines. The central municipal dispensary, selling medicine at cost price, will no doubt be a feature in the new organisation of public health in its widest sense, and that boon will relieve many anxieties that exist to-day in private practice. The presence of State-paid "district consultants," who will be available for consultative work at quite moderate fees to patients, will gradually appear, and any interferences with the routine of private practice by these consultants will be forbidden by definite rules.

Just as we grant forage and horse allowance to medical officers in large districts, so grants in aid for the transport of the medical man will be quite usual. The life of the medical student and his facilities for complete study will be aided in a degree to-day undreamed of, and this alone would be a real boon. The wretchedly defective literary and scientific examination that admits badly educated men into colleges as medical students will be sure to be dealt with, and a General Medical Council full of progressive ideas will replace the antiquated machine which now blocks the pathway of progress.

The reforms to be made will creep on with such almost imperceptible steps that it will appear as if nothing was doing, but at the end of every decade progress will be completely visible, and in a generation victory will be evident. During the whole of these years of stress and strain that are to come men will appear who "want all at once." Such men appear in all movements of progress, but they have to be borne with, and eventually they find their place in the column of march. What makes me sad is that splendid men with whom I worked, the latchet of whose shoes I was unworthy to let loose, and who hoped and dreamed of progress in all its splendour, perished by the roadside and never even saw the Promised Land. When I think of these splendid men, who never lived into the sunshine, then, indeed, I feel regret. Civil reformers will have to endure the same sorrows and will have to hope for the same joys of success.

I say now, as I said to others then, "Fight the good fight; victory is sure to come." The man, the woman, and the child, constituting as they do "the Trinity of Humanity," will surely come into their own as civilisation advances. The pity of it all is that Edmund Parkes, with his beautiful face,

charming ways, and splendid science, is no longer with us; that Florence Nightingale, a veritable tower of strength in health matters, and hidden and concealed by her nurse's dress, has "gone West"; that Sir William Muir, the lion of unification, is at rest; that William Johnston, the brilliant organiser who looked down into the valley of unification but never sat by the waters and rested—all these have passed away. We must never forget the names of these brilliant workers in the new work that is now coming on.

I am, Sir, yours faithfully,

GEORGE EVATT, M D.,
Major-General (retired), A.M.S.

Junior United Service Club, London, Sept. 8th, 1919.

CRYPTOPODIA—DIFFUSE FIBROMATA OF THE FEET.

To the Editor of THE LANCET.

SIR,—On Oct. 2nd, 1906, I made an exploratory incision into the dorsum of a child's foot, which was the seat of a condition probably similar to that of Dr. E. C. Bousfield's patient, described in THE LANCET of August 23rd last. The following are the brief notes of the case, written at the time:—

R. H., aged 15 months, had a diffuse symmetrical fibroma on the whole of the dorsum of each foot. The condition was congenital, but the swellings had grown and formed *large pads which overhung the toes.* Another child of the same parents, and now aged 3 years, has one foot similarly affected, and these two are the only children of the family. An incision was made into the dorsum of one foot, and showed dense smooth fibrous tissue, from which oozed much clear fluid. The fibrous layer of the skin was continuous with the tumour (i.e., there was no subcutaneous fat). An X ray examination showed the bones of the feet to be normal, and a microscopic examination of a piece of the tissue removed showed it to be composed of fibrous tissue containing blood-vessels with thickened walls.

I know nothing of the subsequent history of the children, and I have seen no other case like it.

I am, Sir, yours faithfully,

WM. ROBINSON, M.S., F.R.C.S. Eng.,
Senior Surgeon, Royal Infirmary, Sunderland.

Sept. 6th, 1919.

THE TERRITORIAL FORCE MEDICAL OFFICERS' ASSOCIATION.

To the Editor of THE LANCET.

SIR,—As it is not possible to send notices to individual officers, I shall be obliged if you will allow me to announce in THE LANCET that the dinner of the Territorial Force Medical Officers' Association will take place on Thursday, Oct. 30th, at 7.30 P.M., at the Holborn Restaurant.

The charge for tickets is 12*s.* 6*d.*, not including wine. All Territorial medical officers can attend and bring guests. Application for tickets should be made to me at this address, the office of the association.—I am, Sir, yours faithfully,

D. L. HAMILTON,
Lieutenant-Colonel, Honorary Secretary.

37, Russell-square, London, W.C. 1, Sept. 8th, 1919.

ANTIVIVISECTION SHOPS.

To the Editor of THE LANCET.

SIR,—One of the antivivisection societies lately opened a shop, for three weeks, in Oxford, and will probably open it elsewhere, moving it from place to place. There were many of these shops in the years before the war, and I shall be grateful if anybody in whose neighbourhood the shop appears will immediately let me know of it, so that arrangements may be made for the distribution of leaflets to counteract its influences. I am, Sir, yours faithfully,

STEPHEN PAGET,
Hon. Sec., Research Defence Society.

11, Chandos-street, Cavendish-square, London, W. 1,
Sept. 8th, 1919.

INDUSTRIAL WELFARE WORK.

To the Editor of THE LANCET.

SIR,—During the last three years, inspired by the efforts of far-seeing firms, the welfare movement has made very rapid strides in this country, and the wide recognition now being given to it by employers, workers, and public men leaves little doubt but that within a few years it will occupy a very prominent position in the industrial world. So far no real attempt has been made either by State or voluntary agencies to collate information regarding various phases of the work; in fact, the names of firms interested in the movement are not even recorded in any place. The Industrial Welfare Society is anxious, for the benefit of industry generally, to collect from the pioneers of this movement information regarding their doings in connexion with welfare work. I shall therefore be grateful if those firms who are willing to assist in this way will apply for particulars of the information desired to the Industrial Welfare Society, 33, Tothill-street, Westminster, S.W. 1.

I am, Sir, yours faithfully,

ROBERT R. HYDE,
Director.

Sept. 9th, 1919.

KERATODERMIA BLENNORRHAGICA.

To the Editor of THE LANCET.

SIR,—The case recorded by Dr. S. C. Dyke in THE LANCET of August 23rd presents points of great interest. Keratodermia blennorrhagica is generally considered a somewhat rare disease, having been first described in 1893 by Vidal and first in England by Sequeira[1] in 1910. Possibly cases would be more often observed, as McDonagh[2] suggests, if the soles of the feet were examined in all cases of gonorrhœa—for he says that three cases a year are seen at the London Lock Hospital. Histologically, the growth resembles gonorrhœal warts. It is thought that the gonococcus possibly invades the skin, and in support of this view the case recorded by Dr. W. E. M. Armstrong in THE LANCET of May 17th, 1913, is of interest. Here wart-like growths appeared on the face in a man who had had previously an acute conjunctivitis secondary to gonorrhœa. The secretion had overflowed on to his cheeks, and he had also rubbed them to improve his colour, as he thought he looked pale. This condition, as in Dr. Dyke's case, was rapidly cured by vaccines. Further, Armstrong determined the opsonic index of the blood for the gonococcus before and after inducing congestion in the face, and found a swing indicating an active gonococcal infection. Keratodermia plantæ is known to be associated with neuritis in cases of arsenic poisoning; gonorrhœa may cause peripheral neuritis, the sciatic nerve being most often affected.

These cases are probably due to the gonotoxin and not to direct invasion by the gonococcus. It would be interesting to know whether there were signs of peripheral neuritis in Dr. Dyke's case, for if so possibly keratodermia blennorrhagica may fall into line with arsenical keratodermia, and both be secondary to a toxic neuritis affecting especially the trophic nerves of the skin.

I am, Sir, yours faithfully,

G. E. BEAUMONT.

Avonmore-road, W., Sept. 1st, 1919.

[1] Sequeira: Brit. Journ of Dermatology, 1910, p. 139.
[2] McDonagh: Biol. and Treatment of Venereal Diseases, 1915.

VITAL STATISTICS OF SCOTLAND.—A remarkably high marriage-rate, together with low birth- and death-rates form the most notable features of the statistics published for Scotland for the second quarter of the year 1919. The marriage-rate, 9·5, is the highest quarterly rate on record, while the birth- and death-rates are the lowest recorded for the corresponding quarter of any year.

NATIONAL ASSOCIATION FOR THE PREVENTION OF INFANT MORTALITY.—A course of elementary lectures on infant care, for teachers, infant welfare workers, and others, will be held at 1, Wimpole-street, London, W., on Mondays, 5.30 to 6.30 P.M., from Sept. 29th to Dec. 15th inclusive, in preparation for the elementary certificate of the association. The examination is open to all students who attend eight or more out of the 12 lectures. The fee for the whole course is 5*s.*—A course of elementary lectures on infant care, especially intended for creche nurses and probationers, will be held at the Essex Hall, Essex-street, London, W.C., on Thursdays, 7.30 to 8.30 P.M., from Sept. 25th to Dec. 11th, inclusive, in preparation for the Creche Nurses' Certificate, now instituted by the Association and the National Society of Day Nurseries. The fee for this course is 10*s.*—Tickets for either course can be obtained from Miss Halford, Secretary, National Association for the Prevention of Infant Mortality, 4, Tavistock-square, London, W.C. 1.

The Services.

R.A.M.C. TEMPORARY OFFICERS.

THE War Office is prepared to accept the services of medical practitioners, including those who have been demobilised, who are desirous of undertaking duty with the Army.

Candidates who have served before will be commissioned in their previous rank. Lieutenants who have completed one year's satisfactory service as such will be commissioned as Captains. Those who have not served previously will be commissioned as Lieutenants

The period of engagement will be for six months, and the contract will not be terminable by either party prior to the expiration of that period, except for misconduct, inefficiency or medical unfitness.

Pay to be at the rate of—Lieutenants £600 per annum, Captains £650 per annum, and in addition the following will be issuable:—

(1) Pay at the rate of £50 per annum when serving elsewhere than in Europe.

(2) Rations or an allowance in lieu thereof (present rate 2*s.* 1*d.* per diem).

(3) Specialist's, or charge pay, when holding a position for which the issue of such is authorised.

(4) Officers holding higher acting or substantive rank than that of Captain will, if desirous, be granted the pay and allowances of their rank.

Kit and outfit allowance will be issued to candidates who have not previously received such allowance.

All candidates must be fit for general service or garrison duty abroad, and will require to undergo a medical examination prior to being accepted.

Applications should be addressed to the Secretary, War Office, Cornwall House, Stamford-street, London, S.E. 1.

ROYAL NAVAL MEDICAL SERVICE.

Surgeon Lieutenants (temp.): **A. Ritchie** to *Valiant;* **A. McCallum** to *Malaya;* **H. A. L. Guthrie** to *Prince George;* and **T. H. R. McKiernan** to *Pekin.* Temporary Surgeon Lieutenants transferred to permanent list of Surgeon Lieutenants: **W. P. Vicary, H. Hurst, H. Morrison.** Surg. Lieut.-Cmdr. **R. Willan** to *Renown.* Surg. Lieut.-Cmdr. **R. A. Rankins, O.B.E.,** has been allowed to withdraw from the R.N. Medical Service with a gratuity.

ROYAL NAVAL VOLUNTEER RESERVE.

Surg. Lieut. (temp.) **W. C. Murray** to *Victory.*

ARMY MEDICAL SERVICE.

Col. **A. W. Bewley, C.M.G.,** retires on retired pay.

Temp. Col. **W. A. Turner, C.B., M.D.** (Major, R.A.M.C., T.F.), relinquishes his temporary commission on re-posting.

ROYAL ARMY MEDICAL CORPS.

Major C. M. Drew, D.S.O., to be acting Lieutenant-Colonel whilst commanding a Medical Unit.

The undermentioned to be acting Majors: **Capts. E. Catford, J. Biggam, C. F. Burton;** Temp. Capts. **C. C. Harrison, C. C. Chance, A. Brown, O.B.E., R. Brown, W. H. D. Smith, E. R. C. Cooke, J. S. Lloyd, S. J. W. Donald, R. Thomson, R. H. Alexander, W. Montgomery, W. L. Hay, H. L. Mann, W. A. Todd, G. W. Rea.**

To be Captains: Capts. **W. Fotheringham, M.C.** (from Special Reserve), **W. H. Elliott, M.B.E.** (from Special Reserve); Temp. Capt. (acting Major) **W. S. Martin, M.C.;** Temp. Capts. **H. Mitchell, P. Carney, M.C., R. H. Alexander, M.C.**

The undermentioned Lieutenants (temporary Captains) to be Captains: **C. H. C. Byrne, G. C. Robinson, C. A. Slaughter, W. L. A. Harrison, T. P. Buist, P. H. Wells.**

Late temporary Captains to be temporary Captains: **J. G. Garson, E. Duke, J. Cameron, W. Garton, C. E. Dolling, P. S. MacLaren, J. Cunningham, R. Stephens, E. S. Hall, J. A. Marsden.**

To be temporary Captains: **A. E. Wood** and **M. F. D. Graham.**

H. J. Brink to be temporary Lieutenant.

Capt. **E. N. P. Martland** (from Special Reserve) to be temporary Captain.

The undermentioned temporary Lieutenants to be temporary Captains: (Acting Major) **T. E. Coulson, T. M. Richardson, H. J. Cundell, L. Milburn, R. Lawrence, A. Leigh, W. K. Anderson.**

G. A. Fothergill, late temporary Lieutenant, to be temporary Lieutenant.

The undermentioned temporary Captains, from the Home Hospitals Reserve, to be temporary Captains: **A. G. Price, G. A. Skinner.**

Lieut.-Col. **G. A. T. Bray, D.S.O.,** relinquishes the temporary rank of Colonel on ceasing to be specially employed.

Major and Brevet Lieut.-Col. **A. McMunn, O.B.E.,** relinquishes the temporary rank of Lieutenant-Colonel on re-posting.

Captain **A. J. Hickey, M.C.,** relinquishes the acting rank of Lieutenant-Colonel on re-posting.

Capt. **F. R. H. Mollan, M.C.,** relinquishes the acting rank of Major on re-posting.

Capt. **K. P. Mackenzie** relinquishes the acting rank of Major on ceasing to be specially employed.

The undermentioned relinquish the acting rank of Major:—**Capts. C. Kelly, P. A. Opie.**

Temporary Captains relinquishing the acting rank of Major: **C. S. Dodson, H. M. Grey** (on ceasing to be specially employed), **A. H. Coleman, O.B.E., A. C. Macay, D. Cowin, L. T. Giles, C. C. Chance, R. S. Barker, E. B. Smith, J. N. Wheeler, E. R. C. Cooke, R. Brown, F. W. Matheson.**

Lieut.-Col. **K. B. Barnett** retires on retired pay.

Capt. **C. Robb** retires, receiving a gratuity.

Major **D. F. Mackenzie, D.S.O.,** relinquishes the acting rank of Lieutenant-Colonel on ceasing to command a Medical Unit.

Temp. Hon. Lieut.-Col. **Sir John Bland-Sutton, Kt.** (Major, R.A.M.C., T.F.), relinquishes his temporary honorary commission on re-posting.

Officers relinquishing their commissions: Temp. Lieut.-Col. **H. J. Shirley** (retains the rank of Lieutenant-Colonel); Temp. Majors **T. W. Buckley, D. B. King,** and **W. E. N. Dunn** (retain the rank of Major); Temp. Hon. Majors **T. G. M. Hine** and **A. G. Paterson** (retain the honorary rank of Major); Temp. Major and Bt. Lieut.-Col. **A. W. Robertson** (retains the Bt. rank of Lieutenant-Colonel); Temp. Capt. **J. O. Egan** (granted the rank of Lieutenant-Colonel); Temporary Captains granted the rank of Major: **L. G. McCune, C. A. Weller, W. A. Wheeldon, J. A. W. Watts, C. G. McAdam, R. V. Dolbey, H. L. Neil, B. W. Armstrong.** Temp. Capt. (acting Major) **A. C. Hancock** (relinquishes the pay and allowances of his acting rank), **D. K. Henderson, R. M. Fenn;** Temporary Captains retaining the rank of Captain: **W. M. McDonald, W. B. Knobel, W. Thomas, H. O. H. May, S. E. Denyer, C. W. Cunnington, D. H. Derry, J. E. S. Sheppard-Jones, J. Gilchrist, A. Buchanan, M.C., J. A. M. Bligh, H. M. Jackson, J. A. Clarke, N. V. Mitton, J. W. McDonald** (on account of ill health contracted on active service), **B. J. Mullins, M.C.** (on account of ill-health caused by wounds), **V. M. Fisher, E. Marjoribanks-Marcar, J. E. Rutherfurd, M.C.** (on account of ill-health contracted on active service), **L. A. Moran, C. N. Vaisey, T. H. Holroyd, G. E. Beaumont, A. R. Fraser, H. C. Lucey, W. H. D. Smith, J. M. Rishworth, T. M. Newton, D. Cowin, G. R. Wilson, V. C. Martyn, G. D. McLean, R. F. Young, W. Dawson, D.S.O., C. J. Armstrong-Dash, R. C. Monnington, B. R. G. Russell** (on account of ill-health), **W. E. M. Armstrong, H. P. Gibb, W. H. A. Elliott, F. P. Montgomery, H. D. Wyatt, J. Young, E. O. Hughes, A. M Bell, P. Savill, J. Leach, D. L. Hutton, M. J. T. Wallis, A. R. M. Brenan, J. G. S. Mennie, G. H. Dart. J. P. Lowson, F. Heatherley, A. McEwan, L. F. West, J. Hepburn, R. A. H. Fulton, A. G. Ritchie, W. W. Allison, J. G. Slade** (on account of ill-health), **T. M. Johnstone** (on ceasing to serve with the South African Native Labour Corps), **W. Parsons, H. Goodale, W. G. Ridgway, R. C. Phelps, T. S. Smith, D. Renton, G. L. Thornton, A. Verling, H. Kirkland-Whittaker, M. L. Loveless, C. P. Charles, H. B. H. Tracey, J. R. T. Jones, G. W. Anderson, A. J. Partridge, H. B. Wilkinson, H. L. Shelton, C. M. Smith, L. M. Smith, J. S. Buchanan, D. S. Jones, J. E. P. Shera, J. J. Hughes, J. C. Jones, W. D. A. King, F. H. Nixey, W. Tudhope** (on account of ill-health contracted on active service), **A. B. S. Todd, F. R. Wilson, C. M. Stubbs, E. G. von B. Bergh, J. P. Jones, L. R. H. P. Marshall, O.B.E., A. F. Potter, A. H. Davidson, H. North, D. Clark, G. C. Gaynor, H. F. Bodvel-Roberts, H. M. Gray, J. B. Wilkie, R. J. Ledlie, L. J. Lock, J. A. Glover, M. R. Mackey, J. R. Burnett, J. Glaister, D. Y. Buchanan, W. H. Hart** (on account of ill-health caused by wounds), **R. Stipe, L. B. Cane;** Temp. Lieut. **G. E. Froggatt** (granted the rank of Major).

Temp. Lieut. **J. B. McGranahan** relinquishes his commission and retains the rank of Lieutenant.

Lieut.-Col. **L. A. Mitchell** is placed temporarily on the half-pay list on account of ill-health.

Canadian Army Medical Corps.

Temp. Major (acting Lieut.-Col.) **F. E. Watts** to be temporary Lieutenant-Colonel.

The undermentioned temporary Captains (acting Majors) relinquish the acting rank of Major: **C. W. Johnston, D. A. Morrison, C. Kerr, F. A. Brockenshire, A. N. Aitken.**

The undermentioned retire in the British Isles: Temp. Capts. **W. A. McClelland, A. N. Aitken, A. R. Campbell, Hon. Capt. J. C. McClure.**

SPECIAL RESERVE OF OFFICERS.

Capt. **W. McN. Walker** relinquishes his commission on account of ill-health contracted on active service, and is granted the rank of Major.

The undermentioned Captains relinquish their commissions on account of ill-health, and retain the rank of Captain: **R. G. Waddy, H. Chadwick, G. T. Roche.**

Capt. **M. F. Murphy** relinquishes his commission.

The undermentioned Captains relinquish the acting rank of Major: **R. P. A. Kirkland, W. B. Cathcart, D. G. Stoute.**

Capt. (acting Major) **W. McM. Chesney** relinquishes the pay and allowances of his acting rank.

The undermentioned Captains to be acting Majors: **R. F. Fagan, R. P. Starkie, W. McM. Chesney.**

The undermentioned Lieutenants to be Captains: **H. J. S. Bonnett, I. Patterson, S. A. Withers, A. M. Dugan, F. R. G. Heif, C. Simpson, D. C. Lamont, E. D. D. Dickson, G. R. Ross.**

TERRITORIAL FORCE.

Officers relinquishing their acting rank on ceasing to be specially employed:—

Major (Bt. Lieut.-Col.) (acting Col.) **D. Rorie, D.S.O.,** relinquishes the acting rank of Colonel on vacating the appointment as Assistant Director of Medical Services.

Major (Bt. Lieut.-Col.) (acting Lieut.-Col.) **J. Wilson** relinquishes the acting rank of Lieutenant-Colonel.

Majors (acting Lieut.-Cols.) **T. Donovan** and **A. R. Henchley, D.S.O.,** relinquish the acting rank of Lieutenant-Colonel.

Capt. **A. C. Herne, O.B.E.,** relinquishes his commission on ceasing to be employed, and is granted the rank of Lieutenant-Colonel.

Capts. (acting Lieut.-Cols.) **J. Young, D.S.O., A. G. Hendley, J. H. Thomas, D.S.O.,** relinquish the acting rank of Lieutenant-Colonel.

Capts. (acting Majors) **G. T. Willan, D.S.O., G. H. H. Manfield, C. D. Law, J. J. E. Biggs, O.B.E., L. H. Wootton, M.C., P. B. Spurgin, H. T. Jones, R. W. Aitken, W. N. P. Williams.**

Capts. **G. E. Martin, H. W. Browne, M.C.,** and **A. G. Hendley** to be acting Majors whilst specially employed.

2nd London General Hospital: Major (Bt. Lieut.-Col.) **T. D. Acland** is seconded for duty with the Special Military Surgical Hospital, Shepherd's Bush.

3rd Northern General Hospital: Capt. **F. A. Hepworth** is restored to the establishment on ceasing to hold a temporary commission in the R.A.M.C.

4th Northern General Hospital: Capt. (acting Major) **J. J. Rainforth** relinquishes the acting rank of Major on ceasing to be specially employed, and is restored to the establishment.

1st Southern General Hospital: Lieut.-Col. **F. W. Ellis** is seconded for duty with the 2/1st Southern General Hospital.

2nd Southern General Hospital: Capt. (Bt. Major) **E. W. H. Groves** is restored to the establishment.

3rd Southern General Hospital: Capt. **J. A. Gunn** and Major **A. T. Waterhouse** are restored to the establishment.

3rd Western General Hospital: Major (Bt. Lieut.-Col.) (acting Lieut.-Col.) E. J. Maclean relinquishes the acting rank of Lieutenant-Colonel on ceasing to be specially employed. Lieut.-Col. (Hon. Surg.-Col.) D. Hepburn, C.M.G., V.D., relinquishes his commission on account of ill health and retains his rank.

2nd South Midland Mounted Brigade Field Ambulance: Capt. A. G. Hendley to be acting Lieutenant-Colonel whilst specially employed.

3rd East Anglican Field Ambulance: Lieut.-Col. H. T. Challis to be an Assistant Director of Medical Services, and to be temporary Colonel whilst so employed.

TERRITORIAL FORCE RESERVE.

Lieut.-Col. (temp. Col.) H. T. Challis, from 3rd East Anglican Field Ambulance, to be Lieutenant-Colonel on vacating appointment as Assistant Director of Medical Services.

ROYAL AIR FORCE.

Medical Branch.—Major G. D. Bateman, O.B.E., to be Lieutenant-Colonel.

Capt. (acting Major) A. P. Bowdler to be acting Lieutenant-Colonel whilst so employed.

Temp. Capt. A. H. Panter is granted the acting rank of Major whilst specially employed.

The undermentioned Lieutenants to be Captains: H. F. Squire, J. J. O'Mullane, E. H. L. Le Clezio, N. Rumboll, V. A. T. Spong, H. B. B. Green, S. A. Neild-Faulkner.

R. W. Ryan is granted a temporary commission as Captain.

The undermentioned are transferred to unemployed list:—Major W. G. Mitchell, Capts. P. O. Moffat, A. Leitch, Lieuts. G. H. Johnston, G. Bourne, J. G. Bird, G. H. W. Randal, Flying Officer Hughes.

The undermentioned Captains relinquish their commissions on account of ill-health, and are permitted to retain their rank: T. E. Mulvany, E. H. Hogg, C. P. Strong.

Capt. A. Gleeson (Captain, R.A.M.C.) relinquishes his commission on account of ill-health contracted on active service.

The initial of Capt. O. Gleeson (Captain, R.A.M.C.) is as now described, and not "A."

Dental Branch.—Lieut. L. G. Smith to be Captain.

T. H. Jones is granted a temporary commission as Flying Officer.

INDIAN MEDICAL SERVICE.

Temporary Lieutenants to be Temporary Captains: Richard Ronald Htoon Oo Tha, Vasant Dinnath Madgavakar, Khuda Baksh Awan, Durgadas Sanyal, Mool Singh Bazaz, Roshan Lal Khera, Narayan Raghunath Shahane, Ajit Kumar Sen, Dwijendra Nath Bhaduri, H. H. Colwell, Thakurdas Parmanand Vaswani, Vatackal Thomas Ninan, Kunjuni Thirupod, Govinda Sankaran Tampi, Gopal Gangadhar Limaye.

Major A. E. Grisewood to be acting Lieutenant-Colonel while holding command of an Indian Clearing Hospital from March 7th, 1916, to Jan. 4th, 1917.

The King has approved the grant of the temporary rank of Lieutenant in the Indian Medical Service to Rahmat Ullah Qureshi.

The King has approved the relinquishment of temporary rank in the Indian Medical Service and Indian Defence Force by Capt. Villupuram Rajaratna Nateson.

Medical News.

WE call the attention of our readers to a letter on p. 502 from Mr. Stephen Paget, the honorary secretary of the Research Defence Society. Mr. Paget asks for early warning as to the opening of antivivisection shops, so that he may counteract, through the Research Defence Society, the mischievous misrepresentations to which these places give concrete form.

Dr. John Cahill, who died on Saturday last, was a member of the Egyptian Government Medical Commission, and during the war had been acting as assistant physician to St. George's Hospital.

Dr. Charles Cameron Slorach, of Dumbarton, was killed last week in the Mount Vernon district, near Glasgow, through the motor-car in which he was riding coming into collision with a traction engine. His wife and son, who accompanied him, were injured.

THE St. Thomas's Hospital Old Students' dinner will take place at the Connaught Rooms, Great Queen-street, W.C., on Wednesday, Oct. 1st, at 7 o'clock for 7.30. The chair will be taken by Sir George Makins, President of the Royal College of Surgeons of England.

THE LUNACY BOARD OF CONTROL: FIFTH ANNUAL REPORT.—The report shows a continued decrease in the number of notified persons under care in England and Wales. The total was, last New Year's day, 116,703, and the actual decrease from year to year: 1918–19, 9138; 1917–18, 8188; 1916–17, 3159. In the 80 asylums which continued to receive patients throughout the year the death-rate was: males 25·2 per cent., and females 16·4 per cent., being a further increase of 3·7 and 2·4 per cent. respectively on the high mortality of the previous year, and attributed in the main to influenza and tuberculosis. 6577 mental defectives were resident in certified institutions. The total expenditure for the year on the upkeep of county and borough asylums was £4,062,752, being an increase on the year of £295,717. The average weekly cost of maintenance per head was 14*s.* 5*d.*, a rise of 1*s.* 9*d.* on the cost of the previous year.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students of the hospital will be held at the Connaught Rooms, Great Queen-street, W.C., on Saturday, Nov. 22nd, at 7 P.M., Sir Harry Baldwin in the chair. This being the first post-war reunion, it is hoped a large number of those interested will find it convenient to be present.

FAILURE OF LONDONDERRY WATER-SUPPLY.—An Irish Correspondent writes: The authorities of such an old and important Irish city as Londonderry cannot be congratulated that, owing to their continued procrastination, the water-supply has practically failed. On Sept. 2nd bakeries were carried on with difficulty, picture-houses had to be closed, and no public and only two private houses had electric light. The citizens have been warned to use what remains of the water-supply only for cooking and washing, as it is now in their hands to prevent a famine. On Sept. 2nd the thousands of shipyard and factory workers who turned out in the morning as usual for work had to be sent home again because it was discovered that no water was coming into the tanks at the electric station from the reservoir from which the station draws its supply, with the result that the shipyard engineer had no other alternative but to cut off the supply to the industries, as there was an absence of electric power. A gallon of water per head each day would enable the engineer to provide the necessary power. Until the corporation make up their minds what is to be done in the serious crisis that has arisen, all supplies of water for industrial and business purposes are discontinued, and establishments found using water are to be prosecuted. A similar crisis arose in 1911 in Londonderry, but in the interval the population has increased by 8000, and the shipyard has to be considered. At a meeting of the corporation on Sept. 4th a deplorable situation, as regards the water-supply, was revealed by the city engineer, who said that "if they kept the water they had for domestic purposes only, they could maintain about five weeks' supply at the very outside, provided the citizens exercised the most rigid economy and used only the very minimum." He was prepared to supply the electric station with the necessary water (to begin on Sept. 8th) to enable the necessary power to be provided to carry on industry, although he would be taking considerable risks in doing so, but he could not supply water for trade purposes or for laundries, and he could only give water to factories for sanitary purposes, and even that could not be guaranteed at any particular time; and on the above recited conditions he was prepared to resume a ten days' trial of supplying water for electric power. No wonder the daily press regard such a condition of affairs as a grave crisis for an old city whose population at the last census was 40,779. In Belfast, as reported on Sept. 4th to a meeting of the Water Commissioners, the water in store on August 28th was 1103 million gallons, which is 501 million gallons less than the quantity in store on the corresponding date of 1918. The city has been put on a diminished supply, none flowing into the cisterns at night, a practice of little use, as people simply fill their baths and other receptacles during the day. Unless rain comes in large quantity a serious crisis may also arise in Belfast from the deficient water-supply.

Appointments.

CHISHOLM, JOHN, M.B., Ch.B. Edin., has been appointed Registrar to the Jessop Hospital for Women, Sheffield.

Sussex Throat and Ear Hospital: HUTCHISON, A. J., Honorary Consulting Surgeon; RIGBY, MORRIS, and CROW, DOUGLAS A., Assistant Honorary Surgeons.

Vacancies.

For further information refer to the advertisement columns.

Alexandra Hospital for Crippled Children, Queen-square, Bloomsbury, W.C.—Res. Med. Supt. at Country Hospital near Reading. £400.

Aylesbury, Royal Buckinghamshire Hospital.—H.S.

Barbados General Hospital.—Sen. Res. S. £300.

Birkenhead Borough Hospital.—Jun. H.S. £170.

Birkenhead Union Infirmary.—Res. Asst. M.O. £300.

Brentwood Mental Hospital, Essex.—Loc. Tenens Asst. M.O. £77*s.* p.w.

Bridgend Urban District Council, Penybont Rural District Council.—Joint M.O.H. £800.

Brighton, Royal Sussex County Hospital.—Asst. H.S. £80.

Cancer Hospital (Free), Fulham-road, S.W.—Two H.S.'s. £150.

Central London Ophthalmic Hospital, Judd-street, St. Pancras, W.C.—H.S. £50.

Chartham, near Canterbury, Kent County Mental Hospital.—Jun. Third Asst. M.O. £300.

Cheltenham Eye, Ear, and Throat Free Hospital.—Asst. S. £400.

Chester, Cheshire County Council.—Dist. Tuberc. O. £400.

Chester Royal Infirmary.—H.P. £150.

Derbyshire Royal Infirmary.—H.S. and H.P. £200 each.
Durban, Government Hospital.—Asst. M.O. £400.
East Riding Education Authority.—Female Asst. Sch. M.O. £350.
Glamorgan County Asylum, Bridgend.—Fourth Asst. M.O. £400.
Hackney and Stoke Newington, Metropolitan Boroughs of.—Tuberc. O. £500.
Hyde Borough.—M.O.H. and Female Asst. M.O. £700 and £400 respectively.
Lambeth Metropolitan Borough.—Tuberc. O. £600.
Leeds General Infirmary.—Res. M.O. £150. Res. Obstet. O. £50. Also Res. M.O. at Ida and Robert Arthington Hospitals. £60. Two H P.'s and Two H.S.'s.
Leeds Indoor Institutions, Beckett-street.—Sec. Asst. M.O. £300.
Leeds Public Dispensary, North-street.—Res. M.O. £200.
Lincoln County Hospital.—Jun. H.S. £150.
Liverpool City Infectious Diseases Hospital.—Two Asst. Res. M.O.'s. £200.
Liverpool Infirmary for Children.—Two Res. H. P. and Res. H. S. £90.
Liverpool, Royal Southern Hospital.—Two H.P.'s and Three H.S.'s. £100.
Liverpool Stanley Hospital.—H. P. and H. S. £150.
Maidstone, Kent Education Committee.—School Med. Inspector. £300.
Maidstone, West Kent General Hospital.—Jun. H S. £150.
Manchester, Ancoats Hospital.—Res. Surg. O. £200. Also H.S. £100.
Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—H.S. £150.
Manchester Royal Infirmary.—Path. and Med. Registrars. £350 and £75 respectively.
Manchester, St. Mary's Hospitals for Women and Children.—Two H.S.'s. £100.
Melbourne University.—Lecturer in Pathology. £600.
Mothers' Hospital, 153-163, Lower Clapton-road, E.—Res. M.O.
Newport Borough Asylum, Caerleon, Mon.—Asst. M.O. £400.
New South Wales, Department of Public Instruction.—Prinpl. M.O. £900.
Norwich, Jenny Lind Hospital for Children.—Female Res. M.O. £150.
Nottingham General Hospital.—Two H.P.'s. Also Two H.S.'s. £150.
Queen Mary's Hospital for the East End, Stratford, E.—H.S. £150.
Rotherham Hospital.—Jun. H.S. £150.
Royal London Ophthalmic Hospital, City-road, E.C.—Curator and Librarian. £200.
Royal Westminster Ophthalmic Hospital, King William-street, West Strand, W.C.—Asst. H.S. £40.
St. Mary's Hospital for Women and Children, Plaistow, E.—Res. M.O. £200. Also Hon. Gynæcologist.
St. Mary's Hospital, Paddington, W.—Asst. Surg. for Diseases of the Ear, Nose, and Throat. Also Hon. Anæsth.
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent-garden, W.C.—Jun. H.S. £75.
Salford Royal Hospital.—Hon. Dent. S. Also Res. Surg. O., H.P., H.S., and Jun. H.S. £250, £200, £150, and £125 respectively.
Salisbury General Infirmary.—H.S. and Asst. H.S. £200 and £150 respectively.
Scarborough Hospital and Dispensary.—Two H.S.'s. £150.
Seamen's Hospital, Greenwich.—House appointments.
Serbian Relief Fund, 5, Cromwell-road, S.W.—Female Doctor for Hospital or Out-station work in Serbia.
Sheffield Royal Infirmary.—H.S. for Ear, Nose, and Throat. £150.
Southampton, Free Eye Hospital.—H.S. £150 to £200.
Swansea General and Eye Hospital.—H.S. £250.
Truro, Royal Cornwall Infirmary.—H.S. £170.
Wakefield, West Riding Asylum.—Asst. M.O. £400.
Wolverhampton and Staffordshire General Hospital.—H.S. £200.
Wrexham, Borough and Rural District of.—Temp. M.O. £550.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Inspectors under the Factory and Workshop Acts at Belper (Derby), Birmingham (East) and Erdington (Warwick), Hailsham (Sussex), Hanley (Stafford), and Ulceby (Lincoln).

Births, Marriages, and Deaths.

BIRTHS.

DICKINSON.—On Sept. 6th, at Newcastle-upon-Tyne, the wife of W. H. Dickinson, M.B., D.P.H., of a son.

FULLER.—On Sept. 4th, at Priory Cottage, Freshwater, I.W., the wife of Capt. R. Annesley Fuller, M.C., R.A.M.C., of a son.

MACALPINE.—On Sept. 10th, at Cranbrook, Prestwich, Manchester, the wife of Jas. B. Macalpine, F.R.C.S., of a daughter.

MARRIAGES.

DUNN—JACKSON.—On Sept. 3rd, at St. James' Church, Edgbaston, Major Naughton Dunn, R.A.M.C., to Ethel Violet, daughter of Mr. and Mrs. George Jackson, of Glewstone Court, Herefordshire.

PHILLIPS—MORGAN.—On Sept. 9th, in London, Hugh Richard Phillips, M.D., of 2, Cavendish Court, Cavendish-square, to Phyllis Morgan.

DEATHS.

CAHILL.—On Sept. 6th, at Pinkneys Lodge, Pinkneys Green, the residence of his brother-in-law, Mr. Stanley Keith, John Cahill, M.D., F.R.C.S. Eng., of Seville-street, Lowndes square, S.W., aged 62.

PICK.—On Sept. 6th, at The Nook, Great Bookham, Surrey, Thomas Pickering Pick, F.R.C.S., consulting surgeon to St. George's Hospital, London.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

LAST week an announcement appeared in this column of the marriage of Captain W. E. Elliot, M.C., R.A.M.C., Member of Parliament for Lanark, and Miss Helen Hamilton. The tragic sequel has been widely noted in the daily press. Mrs. Elliot fell some hundreds of feet while mountaineering in Skye, dragging her husband down with her. She was killed on the spot and Captain Elliot somewhat severely injured.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

LONDON HOSPITAL MEDICAL COLLEGE, in the Clinical Theatre of the Hospital.

A Special Course of Instruction in the Surgical Dyspepsias will be given by Mr. A. J. Walton and others:—

WEDNESDAY, Sept. 17th.—4.30 P.M., Lecture XIII.:—Ætiology and Pathology of Carcinoma and Sarcoma of the Stomach.

FRIDAY.—4.30 P.M., Lecture XIV.:—Symptoms and Treatment of Carcinoma and Sarcoma of the Stomach.

Communications, Letters, &c., to the Editor have been received from—

A.—Dr. F. P. Atkinson, Bexhill-on-Sea.

B.—Messrs. J. Bibby and Sons, Liverpool; British Red Cross Society, Lond.; British Association for the Advancement of Science, Lond.; Mrs. C. Brereton, Lond.; Dr. A. Balfour, C.M.G., Lond.; Sir John Bland-Sutton, Lond.; Col. R. J. Blackham; Mr. C. K. Bond, Brighton; Prof. D. T. Barry, Cork; Dr. G. Blacker, Lond.

C.—Dr. E. L. Collis, Lossiemouth; Dr. E. R. T. Clarkson, Petersfield; Colonial Office, Lond.; Mr. A. Cooke, Lond.

D.—Dr. A. Distaso, Whitchurch; Mr. C. Dewdney, Chingford; Dr. O. T. Dinnick, Lond.

E.—Mr. R. Eager, Exminster.

F.—Dr. E. R. Fothergill, Hove; Factories, Chief Inspector of, Lond.

G.—Dr. P. C. Gibson, Lond.; Lieut.-Col. E. Goodall, R.A.M.C.; Dr. H. E. Gibson, Lond.

H.—Mr. J. T. Henderson, Pietermaritzburg; Lieut.-Col. A. F. Hurst, R.A.M.C.; Dr. C. T. W. Hirsch, Lond.; Mr. F. Hubbard, Lond.; Capt. H. A. Halg, R.A.M.C.; Lieut.-Col. D. L. Hamilton, R.A.M.C.; Mr. R. S. Hopkins, Lond.

I.—Industrial Fatigue Research Board, Lond.; Industrial Welfare Society, Lond., Director of.

K.—Dr. A. Kidd, Kilrea; Dr. E. H. Kettle, Lond.; Dr. J. Kerr, Lond.; Dr. H. C. Kidd, Bromsgrove.

L.—Corporation of London, Town Clerk of; League of Red Cross Societies, Geneva; Dr. G. C. Low, Lond.; Mr. E. B. Leech, Manchester; Mr. H. Lacombe, Paris.

M.—Mr. O. F. Maclagan, Rugby; Ministry of Health, Lond.; Dr. H. Martel, Paris; Dr. J. B. Mennell, Lond.

N.—Newspaper Proprietors' Association, Lond.; National Association for the Prevention of Infant Mortality; National Party, Lond., Sec. of.

P.—Dr. R. H. A. Plimmer, Lond.

R.—Dr. J. W. Roberts, Thirsk; Dr. J. D. Rolleston, Lond.; Dr. W. C. Rivers, Worsboro' Dale; Mr. W. Robinson, Sunderland; Royal Institute of Public Health, Lond.; Research Defence Society, Lond., Hon. Sec. of.

S.—Mr. A. C. Schnelle, Lond.; Prof. E. G. Slesinger, Lond.; Dr. K. Simpson, Hounslow; Miss M. Sheepshanks, Lond.; Dr. H. K. V. Soltau, Bletchingley.

T.—Dr. O. T. Todd, O.B.E., Llanberis; Dr. W. W. C. Topley, Lond.

U.—United Water Softeners, Lond.

W.—War Work Council, Y.W.C.A., New York; Mr. R. Warren, Lond.; Mr. H. G. Watkins, Chepstow; Dr. R. C. Watts, Cairo; Sir G. Sims Woodhead, K.B.E., Conway; Dr. F. J. Waldo, Lond.

Communications relating to editorial business should be addressed exclusively to the Editor of THE LANCET, 423, Strand, London, W.C. 2.

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Special Terms for Position Pages.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Notes, Short Comments, and Answers to Correspondents.

PLAGUE AND INFLUENZA IN INDIA.

FOR more than half a century the Government of India have issued annually a Blue-book entitled "Statement Exhibiting the Moral and Material Progress and Condition of India." The fifty-fourth of these statements, dealing with the year 1917–18, has recently been presented to Parliament, and included in its various contents are the following remarks on local self-government tested by disease and scarcity:—

As a symptom of the vitality of the institutions of local self-government in India, it may be mentioned that they rendered excellent service in seconding the efforts of the central and provincial governments in grappling with two of the most important administrative problems which occurred during the period under review—namely, the incidence of epidemics and the high prices of commodities.

Plague.

The monsoon of 1917 was exceptionally abundant and, partly perhaps in consequence of this, plague made its appearance in serious degree during the year. Between July, 1917, and June, 1918, the total number of deaths from plague was over 800,000. Although, fortunately, there is reason to believe that the incidence of the disease in India is on the wane, the distress and dislocation caused by this mortality was very great. In addition to the influence of the plague epidemic the year as a whole was very unhealthy, and a high death-rate occurred both from cholera and malaria. Relief measures were undertaken by the local administrations, the provincial sanitary and medical officers laboured with the utmost zeal, and the number of hospitals and travelling dispensaries was everywhere increased. Preventive measures in the way of evacuation of infected areas were undertaken in many places, and inoculations were carried out on a larger scale than was previously known.

Influenza.

Bad as were the general conditions of public health in India during the year 1917, those of 1918 were infinitely worse. In the month of June, 1918, came the first intimation that influenza in a virulent form was attacking India. In the city of Bombay towards the end of that month many employees of offices, banks, and so forth were incapacitated by fever. The disease began to spread over India, and before long the mortality, at first low, began to rise in an alarming degree. In the city of Bombay itself the mortality reached its maximum on Oct. 6th, on which day 768 deaths were recorded. The full force of the outbreak was felt by the central, northern, and western portions of India, in comparison with which Bengal, Burma, Bihar, and Orissa, Madras, and Assam suffered but lightly. During the last quarter of 1918 India seemed to have suffered more severely than any other country in the world; and influenza was responsible in British India alone for a death roll of approximately 5 millions. Detailed information with regard to the incidence of the disease in the Indian States is not available, but it is unlikely that the influenza mortality therein fell short of 1 million. Within the space of four or five months influenza was thus responsible for the deaths of 2 per cent. of the total population of British India. In some places—the Central Provinces for example—two months of influenza caused twice as many deaths as 22 years of plague. In Bombay, between Sept. 10th and Nov. 10th, the total average mortality was 326 deaths a day. Had mortality continued at this rate throughout the year the death-rate of the city would have been over 120 per 1000 of the Census population. The Punjab also suffered very severely.

Efforts to Cope with the Disease.

The provincial administrations and the local bodies to whom is mainly entrusted the maintenance of sanitation and public health made whole-hearted endeavours to ameliorate the sickness and suffering occasioned by the outbreak. The epidemic struck India at a time when she was least prepared to cope with a calamity of such magnitude. War demands had depleted her sanitary and medical personnel, which at best is inadequate when considered in relation to the size of her population and of the tenacity with which the population clings to domestic customs injurious to public health. The overworked staff that remained was struck down in large numbers. Still more serious were the effects of the almost total failure of the monsoon, which exercised a disastrous influence practically throughout the country. The staple food grains were at famine prices, and the scarcity of fodder reduced the quantity of milk available. Although there is no reason to suppose that the epidemic originated in malnutrition, it was particularly unfortunate that the price of nourishing food, and also of such comforts as blankets and warm clothing was extremely high. In all the larger towns, where severe epidemics occurred, many additional dispensaries were opened by the local authorities, and numerous agencies were employed for the free distribution of drugs and milk. In some towns municipal grain shops were opened which supplied grain below the market rates. Endeavours were made by all administrations to instruct the people as to the nature of the malady, as to measures for its prevention, and as to measures to be adopted when it had set in. The efforts of official bodies, whether provincial or local, were nobly seconded by non-officials, by philanthropic societies, by educational establishments, and by a host of voluntary workers. Everything that could have been done with the agency available was done. But with a population as vast as is that of India to-day, with a relatively low standard of living, the control of so virulent an epidemic is completely outside the present scope of human endeavours.

The magnitude of the task which the administration was called upon to face may be gauged from the fact that, according to the report, it has been estimated that from 50 to 80 per cent. of the total population of India has recently suffered from influenza. It is undeniable that the catastrophe was rendered more complete by the generally insanitary conditions under which the major portion of the population of India live their lives; and the necessity of redoubling the efforts of the administration, both central and provincial, to secure the improvement of those conditions, has become more than ever apparent.

MEDICAL WOMEN IN CONFERENCE ON SOCIAL PROBLEMS.

AN International Conference of Women Physicians, promoted by the War Work Council of the Y.W.C.A., is to be opened in New York on Sept. 15th, and will sit for six weeks. Some 30 representative medical women from various parts of Europe have accepted the invitation to the Conference; doctors from India and China, South America and Canada, are also expected, and delegates from the United States themselves will doubtless be numerous. The general purpose is to learn the attitude towards social education in health and sex problems taken up by the various countries of the more or less civilised world, and to discuss individual national problems. After the more technical aspects of these problems have been dealt with by the Conference, selected members of the lay public will be invited to join the medical women during the last week of their session. The object of this general conference will be to reach a common ground of understanding upon which to base coöperative methods in dealing with social problems affecting the women of the world. The tentative programme submitted to us suggests that the proceedings of this gathering are likely to be of great interest.

THE ETHICS OF ADVERTISING.

AN editorial article in the *Journal of the American Medical Association* of August 9th contains some shrewd remarks on this subject. What is there about advertising having a medical "slant" that so often causes the advertiser to abandon the principle of honesty and common sense? Products which are sufficiently good to stand on their own merits and which, when advertised in a non-medical way, are described truthfully, when they enter the medical or quasimedical field are presented to the public in such a way as to cast discredit on the whole field of advertising. "These thoughts are provoked," says our contemporary, "by an advertisement that has recently appeared in certain medical journals on 'Adams Chewing Gum.' The product itself is one that certainly needs no misstatements or quibbling to stimulate its sale. The advertisement in question is entitled 'The Care of the Mouth,' and is made up largely of what purports to be a quotation from an article by a 'pediatrician.' There are two things wrong with the advertisement. First, the reader is given the impression that the quoted article has appeared comparatively recently; it appeared about eight years ago. Second, the quotation has been garbled and the writer is made to say things that he never said. The parallel indicates the liberties that have been taken:

Original Article.	*As Quoted in Advertisement.*
'The child naturally rebels against THE CLEANSING PROCESS while it is VERY ill and therefore if some more attractive and efficient way can be found to accomplish the same result, we ought to take advantage of it. THE USE OF CHEWING GUM seems to offer the best relief. It is attractive to the child .....,' etc.	'A child naturally rebels against MOUTH cleansing while it is ill or peevish, and therefore if some more attractive and efficient way can be found to accomplish the same result, we ought to take advantage of it. 'ADAMS PEPSIN CHEWING GUM seems to offer the best relief. It is attractive to the child .....,' etc.

The portions that fail to coincide have been put in small capitals. Aside, altogether, from the medical aspects of the case, and aside from the morality or ethics of the matter, the liberties which the Adams Chewing Gum concern have taken with the article have weakened rather than strengthened the 'copy.' These advertisements were for medical journals. The average physician, in reading the advertisement as it appeared, would immediately have his suspicion aroused. This in itself is bad advertising. The reader, knowing that the average physician does not, in scientific articles appearing in medical journals, generally recommend proprietary products, would jump to the conclusion that, if such an article was written, it probably had a venal origin, or else it was probably written by a man of little repute. The chewing gum concern would have made a stronger appeal had they quoted from the article verbatim, and then added their own comment to the effect that if the profession wanted a chewing gum here was one the manufacturers could recommend."

The editor of the *Journal of the American Medical Association* will find it impossible to make his would-be advertisers believe the plain truth of his words.

F. St. J. S.—The condition can hardly be prescribed for on so brief a description; can more particulars be given?